DAILY EDITION

American GAS JOURNAL

Formerly American Gas Light Journal

EST. 1859

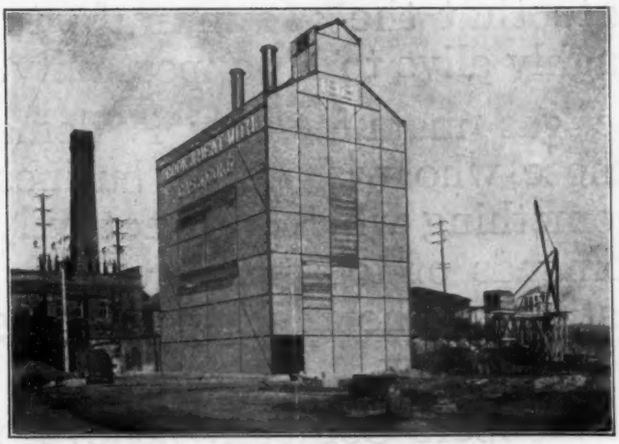
VOL. 117. NO. 21
WHOLE NO. 3376

NEW YORK, FRIDAY, OCTOBER 27, 1922, ATLANTIC CITY, N. J.

Subscription $3 per year
$4 Canada $5 Foreign

GLOVER-WEST *Vertical Retorts*

INSTALLATION AT VICTORIA, B. C.



One of 120 G.W. Vertical Retort Installations

See Back Cover
and
Visit Booth No. 226

WEST GAS IMPROVEMENT CO.
of America, Inc.

150 Nassau St. New York

Building for the future

Now more than ever before, specialized engineering knowledge and experience are demanded of designers and builders of gas plants. At no other time in the history of gas manufacture has the industry been in a better position to put its business on a firm, economically operating basis, and events of the past year indicate that the gas manufacturer is thoroughly alive to his opportunity.

The gas manufacturer is demanding that those who wish to do business present something which will not only meet the demands of today, but will form the foundation of the rapidly growing business of tomorrow.

The Koppers Company believes that it has correctly interpreted the trend of the times in the gas industry and has something to offer which will meet these exacting requirements.

Our headquarters are at Booth 128

The KOPPERS COMPANY
Designers and Builders of
By-Product Coke & Gas Ovens
PITTSBURGH, PA.

AMERICAN GAS JOURNAL. Oct. 27, 1922. Vol. 117, No. 21. Published weekly by American Gas Light Journal, Inc., New York, N. Y. Entered as second-class matter Jan. 9, 1917, at the post-office at New York, N. Y., under the Act of March 3, 1879.

Daily Edition

AMERICAN GAS JOURNAL

Vol. 117, No. 21 NEW YORK—OCTOBER 27, 1922—ATLANTIC CITY Whole No. 3376

COOLIDGE TELLS GAS MEN NOT TO DEPEND ON GOVERNMENT AID

Vice-President at Annual Banquet of A. G. A., Says Success of Industry Depends on the Industry Itself—4th Convention Concludes.

Vice-President Calvin D. Coolidge, as the guest of honor, was the principal speaker at the annual banquet of the American Gas Association, in the Hotel Traymore last night. Covers were laid for approximately 1,000 members and their ladies, and the banquet was marked by unbounded enthusiasm. Mr. Coolidge's remarks dealt largely with the general economic conditions of the country, and were, in large measure, a justification of the G. O. P. administration.

His remarks were punctuated with a trend of optimism, and he declared with a wise government and settled public opinion, the United States would lead the world. Administrative expenses have been materially reduced, the Vice-President said, the public debt has been cut down materially, and the country was making commendable progress toward an era of returned prosperity.

Mr. Coolidge was introduced by George B. Cortelyou, president of the Consolidated Gas Co., of New York, who acted as toastmaster.

It was late when the Vice-President began his address, and his remarks were awaited with eagerness, it being the first time in the history of the American Gas Association that its annual dinner has been so honored.

At the conclusion of Mr. Coolidge's address, Dana D. Barnum, retiring president of the Association, praised the co-operation which has been accorded him during his term, and his successor, R. B. Brown, pledged his unqualified support to the furtherance of the ideals of the Association for the ensuing year.

GOVERNMENT REGULATION TO CONTINUE

Vice-President Coolidge spoke in part, as follows:

"The industries of our country in the latter part of the nineteenth century went through a period of enormous expansion and development. They came into the possession and control of great material resources.. There arrived a time when the popular estimation was that power was used not altogether for the welfare of the public and for the performance of the service for which they had been chartered.

"The result of this was that period of government regulation and control which has characterized the last forty years, and which has been especially emphasized in the last twenty. The states and the nation have adopted a policy and committed themselves to the principle of government control of the great public service corporations. Under local and federal laws this program is in general operation.

"No one would think now of abandoning it. No one would deny that it has improved conditions. Nor would anyone deny that under government supervision and control we have not yet reached a state of perfection.

"The great outstanding fact of those years of experience is that if public service corporations are so regulated as to meet public requirements and perform the greatest amount of service at the .owest cost to the people the cause of such a result cannot be amount of service at the lowest cost to the

(*Continued on Page* 479)

Delay in Printing Registration Due to Inrush of Members

Some criticism has been directed against us because we have not yet published a complete list of registrations. This has been impossible. The members of the Association came in such great numbers that no registration force could have handled it any faster. The A. G. A. registration was efficiently done, but the members themselves, by swamping the clerical force, caused the delay and our daily had to go to press on time so that we could give you your paper for breakfast.

Consolidated Gas Drops 5 5-8 Points on Failure to Increase Dividend

Bears Raid Issue When Directors Postpone Promised Stock Distribution Plan

(*By Staff Correspondent*)

New York, Oct. 26.—A fall of 5 5-8 points in Consolidated Gas was one of the leading features of today's stock market session. Some 28,600 of these shares changed hands, bringing the quotation down to 136½, the movement being due to the failure of the Board of Directors to announce more than the usual two per cent quarterly dividend, and to the postponement of the promised stock distribution plan. The bond market as a whole continued its trend toward lower levels.

Following are the quotations of some of the more important securities. The figure first given being the bid price and the second the asked price:

Adirondack Elec Pr 1st Fives, 91, 94. Down 4.

Adirondack Pr and Lt 1st Sixes, 100, 101. Down ½.

Alabama Pr 1st Fives, 90, 90½. Down 1½.

American Gas and Electric Sixes, 98½, 100½. Unchanged.

American Lt and Trac Sixes, 111¼, 111¾. Down ¼.

American Pr and Lt Sixes, 93, 95½. Down 3.

Asheville Pr and Lt 1st Fives, 91, 93. Down 1.

Brooklyn Union Fives, 96¾, 97¼. Down ¾.

Burlington Gas and Lt 1st Fives, 80, 84. Down 2.

Carolina Pr and Lt 1st Fives, 90, 93. Down 3.

Columbia Gas Fives, 95¾, 96½. Down ¼.

Consolidated Gas 7½'s, 110, 111. Unchanged.

(*Continued on Page* 484)

State Committee Plan Is Boon to Gas Industry

Necessary for Cordial Relations Between Public Utilities and the People Pointed Out at Open Forum Conference—B. J. Mullaney, Presiding As Chairman, Says Customers Must Be Pleased.

How the State committees on public utility information are working untiringly for the establishment of a better understanding between Public Service companies and the public, was the keynote of the Open Forum conference of the several committees, at the Hotel Chalfonte yesterday afternoon, a conference that drew heavily from among the gas men in attendance here at the annual convention.

Favorable and unfavorable comment was in order. Alfred Fischer, of Michigan, concurred with Mr. Groce that education was the essential feature. This education was three cornered—to educate the public, to educate the utility man, and to educate the operator. Mr. Douglass, of Michigan, stated that his committee had formulated plans particularly to keep out of politics, while George F. Oxley, Director of Publicity of the National Electric Light Association, emphasized that proper public relations to bring about continued good will was absolutely necessary.

An important point brought out by J. D. Vomar, of St. Louis, is to teach the present day school children, for very soon they will be investing their money in the public utilities as stockholders. E. W. Crone, of New York, and Ross Murphy, of Tennessee, told briefly just what they were "up against." Mr. Ormond said, "Don't forget the ladies, God bless 'em. They now have a vote and must be considered." J. M. Bennett, U. G. I., Philadelphia, Pa., brought word from Philip H. Gadsden that he was well satisfied with the progress made by the Committees of Public Utility Information, and that he hoped to be with them at their next meeting.

Labert St. Clair, of the American Electric Railway Association, discussed mainly the newly created Public Utility Section of the Associated Advertising Clubs of the World. The directors elected for a period of one year were C. E. Person, Geo. F. Oxley, Labert St. Clair; for two years, Mr. Griffin, H. M. Lytle and W. S. Vivian; for three years, B. J. Mullaney, W. P. Stramberg and J. C. McQuiston. The delegates to the National Advertising Convention are J. C. McQuiston, F. L. Blanchard and B. J. Mullaney. The chairman of the Membership Committee is Benjamin S. Ling and that of the Program Committee, W. P. Stramburg. Within the next few days the new section will elect its officers.

B. J. Mullaney, of the Peoples Gas Light and Coke Company of Chicago, presided as chairman, and outlined briefly the aims and purposes of the state committees, and told of the progress so far made in bringing about a more cordial relationship between the two widely divergent angles. Mr. Mullaney asked the query: "Why should the gas industry be concerned to 'tell the world' about itself?" His reply, in answer to his own question, seemed to the gas men present to hit the nail squarely on the head. "Because," said Mr. Mullaney, "telling it or not telling it impinges upon the broad subject of Public Relations, the importance of which is no longer debatable. No public utility company can be continuously successful in these days of public utility regulation if its public relations are out of kilter."

Mr. Mullaney contended that the gas industry was in a position to realize more good out of this service than any other public utility industry, because

(*Continued on Page* 481)

THE CLOSING SESSION

Program

◆ ◆ ◆

GENERAL SESSIONS
(Convention Hall—Ocean End of Steel Pier)
Friday Morning, 10 *O'Clock*

Report of Committee on the President's Address.

Paper, "The Gas Appliance Price Situation"...A. P. Post
General Manager Interstate Appliance Corp., Philadelphia, Pa.
(Presented for the Commercial Section.)

Paper, "Selling the Gas Bill" A. C. Fuller
President Fuller Brush Company, Hartford, Conn.
(Presented for the Manufacturers' Section.)

Closing Remarks.

PART OF THE HOFFMAN GANG

Head of Pioneer Gas Company Praises Daily Journal Issue

The representative of the American Gas Journal had the pleasure of a few minute's conversation with E. C. Smith, president of the Towanda Gas and Electric Co., Towanda, Pa., while he was enjoying the stiff sea breezes and sunshine at the extreme end of the Steel Pier. Mr. Smith remarked that the Towanda Co. was probably the oldest, or at least one of the oldest, small gas plants in the country, the company having purchased coal from one concern for the past 50 years. Last year, Mr. Smith was president of the Pennsylvania Gas Association. When asked what he thought of the daily editions of the American Gas Journal, Mr. Smith answered that in his opinion it constituted one of the outstanding features of the convention. He recommended the Journal highly for its enterprise in covering the doings of the convention in daily issues.

"Jake" Groble, of the Reynolds Gas Regulator Co., not being able to attend the convention, inserted a telegram in Tuesday's issue of the AMERICAN GAS JOURNAL, knowing that his regrets in this way would reach the entire membership of the A. G. A.

Engineers Discuss a New System of Meter Reading

Technical Section Hears Suggestions At Its Final Session—Doherty Washer Cooler Also Comes In for Animated Discussion—Steere and Wohrley Papers Interest Members.

The final meeting of the Technical Section of the American Gas Association was called to order in convention hall, ocean end of Steel Pier.

C. N. Chubb, the retiring chairman, called upon J. Lucena, who said that Committee on Consumers' Meters had been concerned mainly with the development of a new method of meter rating along more logical and comprehensive lines than the old method of "light meters." He stated that the designations "A, B, C light" meters should be dispensed with. In its place it was recommended that the meters be rated in cubic feet per hour. A system of rating meters was suggested as follows: 5-100, 5-150, 30-330, etc., the first figure referring to the number of lights served by the meter and the second figure indicating the cubic foot per hour rating of the meter. These ratings to appear on the meter badge. Mr. Lucena further stated that the committee had considered it unwise and inexpedient to recommend the standardization of meter construction design on the ground that it would tend to discourage improvement and further developments in this direction by meter manufacturers.

DISCUSSION OF REPORT

J. M. Roberts, of the Peoples Gas and Coke Co., Chicago, Ill., asked "what was the purpose of including the old designation of 'light meters' in the new system?" Mr. Lucena answered that the retaining of the old figure was for the purpose of helping shopmen identify the meters and making it easier for them to lay out the meter connections, etc.

FORSTALL RECOMMENDS NEW WORK FOR THE COMING YEAR

Mr. Forstall took the floor and explained that the purpose of retaining the old designation of "light meters" in the new system was to bridge over the gap between the old and the new. He said that he hoped in time this designation would be done away. He commended the work of the committee, but indicated that he thought that the work of the committee should be extended to include the standardization of a schedule of meter sizes. He recommended that this work be undertaken by the committee during the coming year, so that a report might be made at the next convention.

"Many gas companies have taken steps to standardize the sizes of meters used in their distribution systems," he said, "and it is about time that some official notice be taken by the Technical Section of the American Gas Association of this tendency in the simplification of the schedule of meter sizes." He concluded by stating that he did not see how the standardization of the construction of the meters could have any bad effects on the progress and development of meter design. The report was accepted unanimously.

G. H. WARING SPEAKS

The meeting was then turned over to G. H. Waring, chairman of the Committee on Gas Plant and Production.

In his report, Mr. Waring said that the work of the committee during the past year covered five subjects as follows:

1. The use of Mixtures of Bituminous Coal and Coke as Fuel in Water Gas Sets. This work was carried out by C. W. Bradley. It was found that the rate of production reached a maximum in different sizes of water gas sets when a mixture of coal and coke was used containing 70 to 80 per cent. of bituminous coal.

2. Steaming of Stop End Horizontal Retorts.

3. The Proper Scrubbing and Condensing Facilities in a Coal Gas Plant and Their Effects Upon Tar and Ammonia Recovery, by J. R. Wohrley.

(*Continued on Page* 482)

Westerns' Electrical Man In Action on Pier

One of the Western Gas Construction Company's mechanical controls for water gas plants, known as the "Mechanical Man," is installed at the booth of that company, and surrounded by a platform where its actual operation can be inspected by visitors. A capable staff of the company's men, including T. W. Stone, chief engineer; F. H. Beebe, manager, with Messrs. S. F. Fay, F. S. Calkins, and E. N. Joseph, sales representatives, explain the details of its operation.

Walter Barr, mechanical engineer, who developed the machine is also there to answer technical questions. A moving model in relief, of a mechanical gas set is also on view so that the application of the control to the set may be made fully intelligible to all.

Hanlon Strong for Advertising By Mail

Well-Written Literature Brings Newark Service Corporation Good Dividends — Experts Necessary to Prepare Copy

"If I were to tell you all the advantages of direct-by-mail literature it would take me several days," said J. P. Hanlan, of the Public Service Corporation of N. J. "I am sold on it, I have tried it, I've gotten results and I'm going to continue to use it. Don't misunderstand me, please. Newspapers, billboards and many other mediums are good, and we use them, but newspapers and billboards are not the only good mediums through which a seller can reach his buyer. We have spent as much as $27,000 in one year on direct-by-mail literature, and it paid us good dividends on the investment.

"We use only high class printed matter, nothing cheap or badly printed leaves our office. It goes out as first class matter, no one cent stamp campaigns for us; its simply waste.

"We use a great deal of manufacturer's literature. If we are selling a concern's ranges or heaters and they furnish us with the right kind of folders or booklets we would be foolish not to use them. If we think enough of a concern's product to put it on display and sell it, why not tie up with them on the advertising. It's good business policy.

"No gas company ever sold any appliance with literature which laid around the office or got dusty in the store room. It has to reach the prospect before it begins to get in its work.

"No gas company ever derived any results from a direct-by-mail campaign, the literature of which was prepared by the salesmanager's stenographer or the clerk in the appliance department who didn't have anything to do and therefore was put to work writing mail literature. Advertising of any and all kinds should be prepared by an expert, a man who knows his business, and not by any one around the office who thinks he or she can write. A man wouldn't let his doctor try a lawsuit for him, so why let a bookkeeper write advertising copy?

"Direct-by-mail literature is a wonderful help to salesmen; it plows and fertilizes the field and makes the raising of a crop of sales much easier. Our advertising budget for 1923 is by far the largest we have ever made, and we are going to use every cent of it. Our campaign will reach architects, plumbers, builders, restaurants, hotels, bakeries, confection-

(*Continued on Page* 478)

PICKED IN PASSING

W. H. Gaylord, Jr., of the Quigley Furnace Specialties Company, probably attends more trade conventions and shows than any other delegate at this gathering of the American Gas Association, and his opinion, as expressed yesterday, is that the Association's show this week is the best in the history of the industry.

"The arrangements here are compact, and that makes for the success of the convention," Mr. Gaylord stated. "In other places we usually have to 'spread around.' Here our exhibits are together, and consequently the delegates are together."

Mr. Gaylord reports both that the business of his own company is good and that the reports he hears from other companies in the gas industry indicate that the "pick-up" is general.

"Every little while some one passing our booth says, 'We are using that,'" Mr. Gaylord commented. "That is a very pleasant thing to hear."

"From the kitchen to the parlor"—that might well have been the slogan yesterday of the H. Mueller Manufacturing Company. Its representatives were handing out vanity boxes to the ladies who watched that ever fascinating hydrant that seems never to know when to leave off.

Arthur E. Shaw, president, and F. V. Westermier, chief engineer of the Welsbach Street Lighting Co. of Philadelphia, were greeting their many friends along the Boardwalk and on the Steel Pier yesterday.

JOE NASON

William E. Brennan, of the M. T. Davidson Company, says prosperity seems to be coming along steadily, and bases the opinion largely on the experience of his company. "The war period was a hard trial for everybody," Mrs. Brennan said yesterday. "But it was something we all had to go through with and those of us who did go through it without mishap seem to have lost no ground by reason of that experience." With Mr. Brennan at the M. T. Davidson Company booth is John Lowe.

An ivory-headed gavel was presented by W. M. Brundage, of New York, to J. W. Heins, of Philadelphia, who yesterday became head of the Accounting Section to succeed Ewald Haase, of Milwaukee.

B. RYAN

"Everybody tells me business is good—with the information we have that our business is good, it must be a fact that business everywhere is coming along as it ought to," L. H. Duncan, sales manager of the Equitable Meter Company, remarked. "For our business is good."

With Mr. Duncan at the Equitable Meter Company booth is J. R. Armstrong, engineer.

Many favorable comments have been heard concerning the exhibit of the Merrick Scale Manufacturing Company. While they are not members of the A. G. A., they have shown a spirit of co-operation which no doubt will be appreciated by the membership.

MIKE ADAMS

Exhibits a Revelation to Walter Allison

"Speaking from the standpoint of a consulting engineer," said Walter A. Allison, of Philadelphia, "this convention has been a revelation to me."

"The magnitude of the exhibits, three large buildings, which was far more than I expected to find, impressed me immensely. While I keep in pretty close touch with everything connected with the gas industry, still I want to admit that the manufacturers of equipment showed me some improvements that I did not know had been made. This improvement applies to manufacturing, distribution and utilization. Any man who stays away from the A. G. A. Conventions will soon find himself following the parade, instead of keeping abreast of it.

"I thoroughly enjoyed all the papers read at the different sessions I attended. They were well prepared and contained much food for thought. Two of them, especially, struck me very forcibly. One which stressed the importance of trying to improve relations between gas companies and the plumbing trade, and the other by C. E Bartlet. I liked the convincing way Mr. Bartlett gave the session facts. He left little room for doubt in the minds of any of us.

"Its been said by hundreds today, I know, but I want to say it once more. This has been the greatest convention in the history of the American Gas Association, and we will have to go some next year to beat it."

F. E. Scholl is in charge of the Tallman, Robbins & Co. booth. Mr. Scholl is one of the many who report business excellent.

Coke Discussion Enlivens Thursday's General Session

W. G. Rich Tells Gas Men How Best to Merchandise Commodity to Mutual Benefit—R. L. Fletcher Discusses Effective Methods of Manufacture and Preparation

The value of coke as a desirable guel and a highly profitable adjunct to the gas industry was convincingly set forth in papers, addresses and discussions at yesterday morning's general session. Dana D. Barnum, retiring Association president, formally turned over the reins of government to his successor, R. B. Brown, who occupied the chair at the conclave. Discussions on the subject of coke were presided over by C. N. Chubb, chairman of the Technical Section.

How best to merchandise coke with maximum benefit to the consumer and the greatest profit and convenience to the distributor was effectively described by W. G. Rich, manager of the Coke Sales department of the Providence Gas Co., of Providence, R. I. Mr. Rich summarized the history of the product, proving that it is by no means a commodity that has been originated within the past few years. In 1893 the first coke oven was employed in the United States, Mr. Rich said, and in that year 13,000 tons were produced. Last year 11,164 American ovens had an output of 19,918,000 tons. The speaker estimated the 1922 coke production in the United States at 44,275,000 net tons.

The full text of Mr. Rich's paper will be found on page 504 of today's issue.

TELLS OF COKE MARKETING

The most effective methods of the manufacture and preparation of coke for the market were told by R. L. Fletcher, of the Providence Gas Co., whose theme is carried in detail in this issue on page 499.

"I believe that the great defect in the coke industry is the indifference of the gas companies to the great possibilities of handling this commodity," said Thomas D. Miller, of St. Louis, in discussion the papers on coke. "The gas companies have been able to put over everything they ever tried. The fact that there is practically not a house in the country which is not equipped with gas cooking facilities is an instance of that. The merchandising of coke, I am certain can be "put across" by the serious and united efforts of all gas companies. I believe a campaign of education for the general public would be a most effective method of accomplishing this end."

MILLER TELLS OF SUCCESS

V. A. Miller, of Rochester, N. Y., told of the success in selling coke that his firm has attained. He said that they operated on a money-back guarantee, saw to it that only the cleanest coke looked after their own deliveries, rather than trusting to a contractor, and that these methods had worked well.

Others who took part in the discussion on coke are: W. J. Lavelle, of Boston, and G. S. Brewer, of Buffalo, N. Y.

J. B. Mullaney, of the Peoples' Gas Light and Coke Co., Chicago, told of the value of publicity to the gas industry as a whole, through state committees on public information.

NORMAN CANTRELL
Welsbach

For the benefit of those attending the general session, William T. Rasch, Consolidated Gas Co., New York, chairman of the Committee on Standard Gas Appliances, rendered again his report on standard specifications, emphasising the need for standardization of flexible tubing. Endorsement of the report in general and the flexible tubing phase in particular was given by Reginald D. Doul, Consolidated Gas Co. of New York, and Association representative to the National Board of Fire Underwriters.

FLEXIBLE TUBING IS MENACE

"The use and sale of flexible tubing should be absolutely prohibited," Mr. Doul declared, "because not only is it a menace to the general public but is seriously affects the reputation of gas appliances, especially gas heaters. I believe that if the gas companies took this matter up in a serious manner there would be no flexible tubing in use or for sale without standard specifications, and this would eliminate the bad repute that is upon gas appliances."

At the suggestion of William J. Clark, vice-president of the Westchester Lighting Co., of Mt. Vernon, N. Y., the session arose en masse as a tribute to Association members who have passed on during the past year. The members thus honored were: William H. Bradley, Emerson McMillan, William MacDonald, Frank H. Freuauff and John Williamson.

Heat and Time Control for Housewives

Thermostatic control of gas appliances for the modern housewife form the important feature of the exhibit of the H. A. Wilson Company, of Newark, N. J., and one of the best of these is a combination of a time and heat control so that the queen of the household may now place the dinner on the stove or in the oven and by simply setting a time dial for the required number of hours or minutes, go about her shopping with the satisfying knowledge that the dinner will be cooked just enough and no more and ready for hungry hubby in case she should be detained. The general application of practical thermostatic control, it is predicted, will do more to popularize modern gas appliances with the housewife than any other agent known.

Other controls for ironing machines, and the Wilco snap action water temperature control form a part of the disploy which is in charge of Mr. H. A. Wilson, president of the company; E. L. Fonseca, chief engineer, and McKay Hunt, Sales Manager.

National Stove Co. Pleased With Results

"This is the best convention I have ever attended," said S. E. Little, Sales Manager of the National Stove Co., division of American Stove Co.

"The exhibits have been crowded from morning to night with people who have shown a real interest in gas appliances. I feel sure every manufacturer here has been well repaid for the time, effort and money expended in showing his wares in Atlantic City.

"All signs point to a very prosperous year in our industry."

Best Year So Far Says Gardner Lattimer

Smiling pleasantly, and with a cordial greeting, Gardner Lattimer, of the Lattimer Stevens Co. of Columbus, Ohio, welcomed the representative of the American Gas Journal to the well-arranged and attractively laid-out booth on the Steel Pier. When asked how business was, Mr. Lattimer replied that, "last year was the best yet and that this year the prospects are for a third greater business than in the year gone-by." Inasmuch as the Lattimer Stevens business is so closely connected with the gas industry in general throughout the entire country, this spells good times for the gas industry as a whole. Such words, coming from so well informed a man as Mr. Lattimer, substantiates what has been the general feeling among the members visiting this year's convention, namely that all eyes are now directed toward the future, toward a bright future according to all indications, that the business of the gas industry is improving and in fact that the industry has already reached the stage of good business and prosperity.

Wehrle Company Exhibit Interesting

The exhibit of the Wehrle Co., in charge of F. E. Rigger, was one of the most interesting and complete displays on the Steel Pier. A variety of stoves were shown, illustrating the closed top feature, the combined gas stove and hot water heater, the combination of pilot light and simmer and the coal-gas range provided with a gas heater for incineration of waste and for starting the combustion of coal without the use of kindling wood. Mr. Rigger stated that the business of the company was excellent, the large plant making about 1,800 stoves a day. In this plant the entire stove is built up from the basic raw materials, and every portion of it is made in the factory.

Besides Mr. Rigger, who was in charge of the exhibit, there were the following men on hand to greet and explain to the many visitors to the booth the interesting and novel features of the stoves and ranges made by the company: G. Cousino, general sales manager; F. J. Lee, of the New York (Manhattan) district; G. Schlessinger, Brooklyn district; A. Weissmuller, of Northern New Jersey district; . D. Crocker, of the Philadelphia district; E. L. Ketchum, of the Washington district, and E. Mason, of the Chicago district.

N. Goreau, who named his water heater Go-Ro as a kind of simplified spelling of his own name, interested numerous commercial men by his so-called "plumber plan" of selling Go-Ro water heaters. Mr. Goreau stated that this plan in effect makes the individual plumber an agent for the Go-Ro heater.

The Informal Dance Tuesday Night

The First Social Event of the Convention—Informal Dance and Entertainment on the Steel Pier

"I get the American Gas Journal on both coasts," J. Brombacher, president of th Superbo Manufacturing Company of Los Angeles, said yesterday morning when a reporter of the American Gas Journal handed him Thursday's number of the daily edition.

"Out in Los Angeles I just get the weekly, but it is fine to get the daily every morning. That's a novelty I had to come to Atlantic City for."

J. M. Denney, L. J. Gelshenen, H. R. Redington and W. L. Schaeffer are in charge of the booth of the National Tube Company of Pittsburgh.

Gas Men Hear Papers On Various Accounting Systems

W. A. Sauer, of Chicago, Points Out Importance of the Gas Bill, and Tells Members the Necessity of Keeping Customers Posted As to Facts—Rate Schedule Should Always Be Shown.

Two far separated points of the accounting "end" of the gas business were put before the accounting section of the American Gas Association, yesterday afternoon, with the resu.t that the meeting was one of the most spirited held during the convention.

They seemed like simple matters: "The Gas Bill Form—Comments and Suggestions," by W. A. Sauer, comptroller of the Peoples' Gas Light and Coke Company, Chicago, and "The Report of the Committee on Continuous Inventory of Fixed Capital," by H. C. Davidson, chairman, Consolidated Gas Company, of New York.

Mr. Sauer's paper first pointed out the importance of the gas bill, on which he declared the following points should be made plain:

Name of the company.

The fact that the statement delivered to the customer is a gas bill.

The correctness of the name and street address of the customer.

The account reference (this, however, to be modified according to size of company and other circumstances).

Provision to show meter readings both past and present.

Gas consumed and calculation of bill.

When Mr. Sauer proceeded then into a discussion of the many additional items that might be printed on the gas bill, he specially stirred the delegates, who began manifesting a desire to answer.

B. F. SAUER STARTS SOMETHING

Mr. Sauer said in part:

"Notation and space must be provided for, previous gas bill unpaid, merchandise charges, maintenance and jobbing charges. Some few companies bill merchandise, maintenance and jobbing charges, separately, but such is the exception.

"Space for the total amount due, where a combined bill is made, is not always provided for. This seems like negligence or indifference. Not only should space be provided for a total, but additional space should be provided in the event that it is necessary to change the total shown.

"The date of the bill, or due date, should be shown, and usually is, but the method of expression varies. A bill marked 'This bill is due June 1st,' is criticized as intimating that it will be gross after June 1st, which is not what is intended. The term 'Gas Bill of June 1st' is used by the company which I am with, as being the date of the bill, but a separate date is shown as the date after which the bill becomes gross. While this is apparently a technicality, it covers a rather important point and creates considerable comment by customers unless clearly stated.

"The rate schedule should always be shown somewhere on the bill, particularly where a rate has several steps. I do not believe it necessary for the bill to show the computations for each step, but the total amount of the bill should be shown—gross and net. A reference should be made to the rate schedule which should be placed either on the front or the back of the bill. If the customer is interested he will determine how the bill is computed and thereby become more familiar with the rates charged.

"The form should always carry an explanation regarding the date of the expiration of what is commonly termed the discount period. In examining many of the sample bills submitted by the various companies, the notation calling attention to date of the expiration of the discount period seems to be unnecessarily sharp and abrupt, *i. e.*, 'Discount expires June 10th, please do not ask for it after that date.' While this states what is desired, might not this statement be covered in a more pleasing way?"

Mr. Sauer said the coupon part of the bill should carry the following information:

Name and address of customer; book reference; gas charges net and gross; merchandise charges; other charges; total charges.

MODEL FORM

A model form of 3 3-8 inches by 11 1-2 inches was submitted by Mr. Sauer, its adaptibility to easy mailing in glassine envelopes being considered. For the gas bill, he suggested

(*Continued on Page* 484)

Show Model Skip Hoist

Among the important and instructive exhibits is the complete model in miniature, of a skip hoist for coke, coal or ashes combined with the Beaumont Balanced Vibrating Jig Coke Screen which is in continuous operation under the control of an automatic timing machine, installed at the space of the R. H. Beaumont Company, of Philadelphia. The demonstration serves to prove a saving in repair costs and losses through breakdowns, and through the addition of the automatic control losses from labor difficulties.

R. H. Beaumont is in personal attendance, as are also Messrs. C. W. Ross, contracting engineer; W. F. Hale, chief engineer, and H. E. Burch, sales representative.

Welsbach Display Very Elaborate

What is undoubtedly one of the most artistically laid out displays of the entire exhibit, is that of the Welsbach Co., combining as it does, a strickingly effective arrangement with a practical display of a large and varied line of known reputation, and with a staff of nearly a score of representatives in attendance. As the visitor approaches the display he is greeted by an attractive young lady who proceeds to decorate him with a boutonier. Then he is taken in charge by a courteous representative who proceeds to show and explain the company's newest creations in artistic fixtures. These comprising a line of modern dome lights, some of which are pilot lights and some "Self-Lighting," requiring but a slight pull on a chain or cord to light. There is also a line of new design wall bracket, lighted by a turn button of the same style as that used on electric fixtures and a new type of hall lights with inverted domes. All of these use the company's standard "C. E. Z." mantles. Another interesting feature is the "Self-Lighting" room heaters, which are lighted without the use of matches by turning a button at the side of the heater, also spot heaters. In the self-lighting type has been achieved a combination of two separate types of heater, employing both the radiante and reflector principles.

The display is the work of Charles W. Wardell, who is in charge. Among those who may be found at the display are Sidney Mason, president; Townsend Stites, general manager, and Messrs. E. S. Chapin, New York representative; Theodore Piser, Boston representative; W. Stevens, Columbus; Joseph Langler, of Providence; R. S. Rolston, of Philadelphia, and Norman Cantrell, assistant general manager, in charge of sales.

The fixtures in the little model house erected on the outside or Boardwalk front of the pier, were also specially constructed in miniature by the Welsbach Company.

The success of the work of a section, not only during convention time, but all through the year, is due largely to the efforts of the secretary. An instance of this is the work of C. W. Berghorn, Jr., in handling the secretarial phases of the Manufacturers' Section, which helped to make possible the business-like fashion in which the conclaves were held.

Mr. Berghorn was a busy individual during the convention. Not only was he charged with his work as secretary, but with W. H. Fulweiler he made the exhibit of the U. G. I. one of the most effective of the exhibition.

The Eternal Feminine by Betty Bennett

THERE'S SADNESS IN THE AIR

"I hate to leave! Isn't it hard to say 'good-bye?' I'm coming to the convention next year, but that's a long time off. I've had such a good time, I just can't bear to go." Such conversation is now most common. The gay parties are over; friends are saying 'good-bye.' In short, it's time to pack for home.

Isn't it strange how widely scattered we'll be in another week or two? Some on the Pacific Coast; some way down South; and others in towns and cities throughout the United States.

Among those who have the longest distance to go before reaching home are Mrs. J. Brombacher, Los Angeles, California, and Mrs. H. Crawford, San Francisco. Those whose homes are in the South include Mrs. B. B. Ferguson, Portsmouth, Va., Mrs. J. F. Ranier, Memphis, Tenn.; Mrs. W. B. Tuttle, San Antonio, Texas; Mrs. L. H. Werner, Richmond, Va., and Mrs. L. F. Wynne, Atlanta, Ga.

With homes scattered through the Middle West are Miss Julianne Doane, Chicago; Mrs. O. F. Davey, Sheboygan, Wis.; Mrs. L. Elbert, St. Joseph, Mo.; Mrs. H. French, Fond du Lac, Wis.; Mrs. E. H. Fraser, Battle Creek, Mich.; Mrs. E. Haase, Milwaukee, Wis.; Mrs. L. L. Kellogg, Sioux City, Iowa; Mrs. George Habbersett, Detroit, Mich.; Mrs. E. G. Pratt, Boone, Iowa; Mrs. M. P. Raper, Rockford, Ill.; Mrs. H. Armstrong, Sioux Falls, S. Dakota; Mrs. H. C. Bates, Chicago, Ill.; Mrs. W. S. Brown, Milwaukee, Wis.; Mrs. H. C. Basket, Detroit, Mich.; Mrs. Frank Crukshant, Decatur, Ill.

Mrs Peterson Dicusses Cake With Personality

"I want you to watch me make a cake," began Mrs. Anna J. Peterson in her lecture demonstration in the Auditorium yesterday morning. "Cake is the simplest thing in the world to make. Cake that melts in your mouth. Cake that makes you fairly ache to get hold of before it's time to eat. Cake with lovely marshmallow icing, chocolate, or caramel," she continued.

"When you make lovely angel food cake or sunshine cake, just think of my friend, Mary, who's fluffly, light, and dainty," she said. "And when you want something solid, like bread, roast beef, or ham, just think of me," she added.

And then began the making of the cake. For those who might like to make a "like Mary cake," here is the recipe:

1½	cups sugar
½	cup fattening (or 8 tablespoonsful)
1	teaspoonful salt
1	cup of water
3	eggs
3	cups of sifted pastry flour (or 2¾ ordinary flour)
4	teaspoonsful of baking powder
1	teaspoonful flavoring

To put the cake together cream shortening and then add the sugar. Doing so lets free the moisture and softens the grains of sugar, making them fine. Each egg is put in separately and beaten well into the mixture. Now it's time for the dry ingredients to be stirred in slowly. Put in the oven and cook (if it's been placed in layer tins) 55 minutes. When you want to make a white cake, merely fold the whites of the eggs in last, or if you prefer muffins, just put in one more tablespoonful of water, leaving out the whites of the eggs.

According to Mrs. Peterson, most cake failures begin with the measuring of the shortening. "Accuracy always" should be one's motto when measuring. "And you don't need to exert all your strength stirring. Do it lightly, letting the air in," she directs. "Just guide your hand slightly, that's all that is necessary." For flavoring, she suggests getting a bottle of vanila, of lemon, and one other kind, emptying all into one, then using a teaspoonful of the mixture. It does sound good, doesn't it?

Now for the icing. The recipe is 1 1-3 cups sugar and ½ cup cold water. "I do believe that the most distressing happening is to have icing crystalize. Let me picture the kind that should be made. Icing that piles up and up like snow on a snowy day when it's just warm enough to make you want to go outside. You may add ¼ teaspoonful of cream of tartar or, as I prefer, 1 teaspoonful of white corn syrup. This keeps the frosting from sugaring," declared Mrs. Peterson.

She took great pains to explain just when icing should be removed from the stove, for not cooking it sufficiently is a usual fault. After the drops from a spoon become heavy, the icing must be watched. Then comes a tiny thread, but not until you have a long thread hanging from the lifted spoon, one that you can spin about, must the icing be removed.

And now we have the cake complete from beginning to icing.

WHAT ONE WOMAN WRITES HOME TO HER NEXT DOOR NEIGHBOR

Thursday.

Dear Nell:

Sure was glad to get your letter, but I'm ever so sorry that Junior has the chicken-pox. Does he itch very much? No wonder you've been too busy to write.

We've been on the go so much that I'd almost forgotten even that people had chicken-pox. Harry kicked at going out so much at first, but now I can't sit down ten minutes without his drawling out, "Well, are you stuck fast, Hat? Thought you wanted to go around!"

How do you like the picture I'm enclosing? It's one taken of us in groups of six at the luncheon yesterday at the golf club. Isn't that some stunt? The camera man had us walk past, instead of taking everybody together. Do you think I look funny in it? Harry thinks I do. He says, "With that

(*Continued on Page* 483)

F. H. PAYNE

Central Heat Plant Gains In Popularity

Henry Loebell Says Industry Is Now on Sound, Solid Basis—Centralization Reduces Cost

The proverbial busy bee is a drone compared to Henry Loebell of the Improved Appliance Company. He goes from one place to another so fast, and sees and talks to so many people in the course of the day that a reporter for *The American Gas Journal* had a difficult time locating him, and when he did find him he had a much harder time making him answer a question. The question was: "Are we making any progress in the industrial fuel line?"

"I'll say we are," said Mr. Loebell. "The industry is now on a sound, solid basis. The groping in the dark is over and we have a complete understanding of our product and our field.

"We have had to travel over the same road the electrical people did in the beginning. Furnishing power from a central station was a new, an untried thing. Manufacturers were afraid of it. They thought the power house might burn down, or the boiler blow up or the company go into bankruptcy and leave them without motive power. For a long time each plant made its own power. Now they've been educated away from it. We've succeeded in further adding to that education and as a result industrial heating from a central gas plant is becoming more and more popular. A closer understanding, or rather, a better understanding now exists between heating engineers and the management of the gas companies, and we are getting both better co-operation, service and rates.

"As every single pound of fuel, coal, coke, etc., must be gasified before it goes into a plant, it stands to reason that a large manufacturer of gas at a central plant can furnish the fuel better and cheaper than the plant can make it themselves. That's the whole answer in a nut shell. We've made rapid progress during the past year and the future holds great promise."

F. J. ZINKE

IKE ROSSON

Rotary Displacement Meter Feature of Connersville Exhibit

One of the features of the convention was to be found in the exhibit of the Connersville Blower Co., of Connersville, nd. This was the so-called rotary displacement meter, an apparatus for measuring the flow of gas both in the gas plant, where it may be used as a station meter, and in the large factories consuming considerable quantites of gas, as an industrial fuel. This meter is built on similar principles to the Connersville blower, and is of the two impeller type. The impellers work backward instead of forward as in the blower. They are actuated by the flow of the gas, and so fine is the workmanship of the meter and so well-made are the anti-friction bearings that only a pressure of one-tenth of an inch of water is sufficient to cause the rotation of the impellers and the actuation of the recording device on the meter.

The meter that was on exhibit at the Connersville booth was shown in actual operation, being driven by the blast of air from an ordinary electric fan. According to Mr. C. R. Houghton, the visitors to the booth were numerous and particularly attracted by this new type of meter. The company is expecting a large business next year on this new meter, which possesses the advantages of being extremely accurate, having a wide range of operation, a low operating cost and great reliability.

F. W. STEERE

Mr. and Mrs. Edward F. Davis are in Atlantic City attending the convention. Mr. Davis represents the Celites Prod-Products Co., of New York, is one of the ucts Co., of New York.
country.

JIM B. CONROY

Customer Ownership Holds Interest in Public Utilities

W. H. Hodge Discusses Briefly Advantages of This Comparatively New Phase of Financing—Plans Proven Successful

"Customer Ownership" has been during the last few years a very interesting topic of discussion and in practice many companies have inaugurated this system, one of the most recent being the Public Service Corporation of New Jersey, through the issuance of an 8 per cent. preferred stock.

"But is not customer ownership, as far as companies are concerned, reaching the 'saturation' stage?" So asked W. H. Hodge, yesterday, of H. M. Byllesby & Co., of Chicago, pioneers in this form of financing, and bankers and managers of Standard Gas & Electric Co., operating throughout sixteen states in this country.

"I am not in a very favorable position to comment on customer ownership, except from the standpoint of the public utilities," commented Mr. Hodge, "but, to my mind, the only logical industry which can successfully follow out this plan is the public utility. The reasons are obvious. Our industry supplies necessities to the public, with the result that the earnings are stabilized. The same cannot be said concerning an industrial, the earnings of which vary to a large extent. In the last analysis, the investor desires a good market for his securities and a steady rate of income. The public utilities can readily supply this, on an increasing scale, while the industrial concerns during one year may report record income, and next year show a very decided reversal. Dividends, on such a basis, cannot be continued, and the inevitable result is the loss of goodwill."

Mr. Hodge points out that since the plan has been adopted there has been no trouble and no agitation against his company, when rate increases were put into effect. An instance of interest took place in Louisville, a few years ago, at a securities holders' meeting of the Louisville Gas & Electric, a subsidiary of Standard Gas & Electric. A gentleman of color asked for the floor, "Ah move tha' Louisville Gas & 'Lectric increase tha' gas'n' 'lectric rate, 'couz we ain't makin' 'nuff money." This Southern gentleman realized what thousands of other investors felt; that while they would be paying more for the commodity received, the additional household expense would be paid back in the form of interest and dividends.

"The gas and electric industries are man's closest friends. They supply light, heat and fuel. The user can see and feel them, **and what's more, he must use them.** He is interested in them, and this interest is now tending more and more in the financial direction. However, the same is not true of a manufactured product. All persons living in a certain vicinity served by one public utility, and using its products, do not need and do not buy a manufactured product every day in the year or at regular intervals.

REPUTATION SHOULD BE SAFEGUARDED

"We are, therefore, coming to the stage where customer ownership should be safeguarded. The unseasoned companies which sell their securities to their customers, and pay interest and dividends for a year or so, and discontinue further payment are parasites to ours or any other industry. They feed upon the excellent record which we have established to such an extent that they almost destroy what we have upbuilded. This condition should not be allowed to exist, for sooner or later the results will be dire.

MR. HODGE'S BELIEF

"Just a word in reference to our own company. Standard Gas & Electric has taken its customers into its confidence more and more with very favorable results. Our services have improved hundred-fold and we have converted thousands and thousands of our customers into holders of our securities. It is my personal belief that were companies to follow this plan, the labor situation, as affecting these companies, would be greatly improved, for there is little doubt that many of the employes would be customers as well as security holders.

Remarkable Automatic Water Gas Control

Much interest was exhibited by gas men in the compact automatic water gas control designed to do anything and everything that a human operator could do and with greater accuracy and certainty of operation, exhibited by the Gas Machinery Company of Cleveland. The operation can be instantly changed from automatic to hand control while the machine is running, and the length of cycle changed, and the opening and closing of any valve changed to suit any desired operating percentage. A power driven pressure regulator for retort or oven is also on display..

Present in the exhibit are P. Planting, president, and Mr. W. E. Steinwedell, secretary of the company, with L. C. Hamlink and C. H. Printz, vice-presidents.

Hanlan Strong for Advertising

(*Continued from Page* 471)

aries and institutes. We are going to keep every manufacturer in our territory posted, regardless of whether they are still prospects or have been customers for years. We hope to win over the former and keep the latter satisfied.

"A gas company can not depend upon its own brain power entirely in the advertising field. If some one else has a good idea for sale, buy it. Good schemes, something which will sell appliances or power, are hard to get. If you can't think of one and the other fellow can, pay him for it and then get your money back by its use.

"We are now sending out a very clever piece of mail literature. It is a six-by-seven cardboard with a pocket. The front carries the message, 'Make candy at home.' Under this headline is shown a modern kitchen. In front of the range stands a mother who is giving her two children some candy which she has just made. Inside the pocket are receipts for the making of all kinds of candies. This sort of literature will get results.

"Illustrations on literature are excellent. Foreigners may not be able to read English, but the understanding of pictures is universal.

"I would like to see the American Gas Association issue literature similar to that issued in 1917. It can be used by all of us, and would prove of greatest value to small gas companies who can not afford to get out their own.

"Many well known doctors and surgeons have stated on numerous occasions that most of the illnesses and a large part of the operations on women are due to house drudgery. Modern gas appliances cut down house slavery; model kitchens tend toward model homes and home life is the foundation of our country and our civilization."

Coolidge

(*Continued from Page* 469)

people the cause of such a result cannot be supplied from without. It must be supplied from within by the management themselves of these great public enterprises. The government cannot relieve the owners, operators and managers of responsibility either for the success of their corporations from a financial point of view nor insure to the public an adequate and economical service. Neither individuals nor corporations can rely on government sources for success. Unless they have within themselves the necessary elements to contribute to prosperity, prosperity will not prevail.

TRYING TO SHIFT BURDEN

"Growing out of this theory of government control there is an increasing tendency to try and shift the burden and responsibility of citizenship upon the government and deceive ourselves by thinking that thereby all our problems will hereafter be solved.

"This is a perversion of self-government which holds to the principle that the government does not make the people but the people make their government. The attempt to transfer the burdens and problems of existence to some board or commission under government authority does not provide an ultimate solution. It may be of assistance, it may point the way, it may be an instrument for the administration of justice, the checking of evils and the protection of the weak from the impositions of the strong, but unless there abides in the people themselves a public sentiment which will support the enforcement and observance of rules and regulations laid down in public law, all other remedies are in vain.

"This is a fundamental reason for the reign of law and the maintenance of order. It is not enough to observe the terms and provisions of the constitution and the laws when they stand for our own protection. A reign of law and order means that they are to be observed when they are the source of protection to others. Observing public authority when it meets with our approval and disregarding it when we feel that it imposes some hardship upon us is not constitutional government. It is either despotism or anarchy.

JUSTIFIES THE ADMINISTRATION

"This is not an easy lesson to learn, nor is it always agreeable to follow, but it is the foundation of civilization. One of the chief efforts of the present national administration is to revive this conception of our form of government. One of the requirements of the reign of law means that those in authority should observe their constitutional limitations.

"For the purpose of conducting the great war the American people and their representatives voluntarily surrendered a part of their liberty to secure immediate and effective action; but when the war ended, constitutional government required that all public officers should reclaim their authority and refrain from the exercise of all unwarranted jurisdiction.

"There is a well-defined attempt at Washington to maintain a government under three independent separate departments, consisting of the executive, the legislative and the judicial authority of the nation. None of these departments is now undertaking to exercise directly or indirectly any unwarranted control or jurisdiction over the other. If there be any impatience in the country at the seeming lack of expedition of the public business, it is the necessary price which must be paid to insure the continuation of our liberties.

"But it has been not only necessary to restore the peace time conception of government, but to liquidate the economic results of the war. It has been necessary to make our peace with the rest of the world and take up the work of re-establishing friendly relations with all the peoples of the earth.

NATION IS LIQUIDATING

"In a comparatively short interval the business enterprises of the nation have been able to go through a complete process of liquidation. The trials have been severe, but the final results are growing more and more gratifying. It has been necessary to meet the problems of restoring the credit of the transportation interests of the nation, assisting the agricultural sections of the West and South, protecting our country from the inundations of war-worn peoples at a time when there was a threatening condition of unemployment facing our own American citizens.

"It was realized that liquidation in private business could not be accomplished unless there was first liquidation in public business. Government expenditures have been enormously reduced, their control and supervision placed under a budget system; the revenue laws of the country revised, taxation in many instances abolished and in general readjusted and greatly reduced.

"National expenditures are of course very large. The obligations of the war debt call for nearly 1,350 million dollars each year. There goes for the care of ex-service men suffering disabilities, for their education and the support of their dependents 500 millions more. The cost of the army and navy is still much larger than it was in the pre-war years. But in spite of all these various additions, the ordinary national expenditures are being rapidly reduced toward the level of which they stood before these inescapable increases.

INDUSTRIES ARE REVIVING

"The tariff law has been revised according to a policy of protection. The great problem of organizing an American merchant marine is being worked out. A large number of public employees have been restored to productive enterprises. The public debt is being steadily and constantly reduced. Under the cooperation which has existed between private enterprise and public authority, a condition of prosperity is steadily returning. Industries are reviving and the consumption of raw material is increasing. The transportation of commodities has almost equalled its highest previous record. The building industry is flourishing and employment exceeds the supply of labor which is in the enjoyment of increasing wages.

"Every effort is being made to build up closer commercial relations with the South American republics. The guaranties of peace have been strengthened by the removal of misunderstandings and the sources of international friction which might lead to war. A heavy burden of expense has been lifted from the peoples of the great nations by the agreement for limitation of armaments. The policy of the open door in China has been re-established and the confidence of the people of that republic restored by justly returning to them their ancient provinces and ports.

"A great progress has been made both in the restoration of better economic conditions of our people at home and in a better understanding with the other nations of the earth. The work is not all done. The necessity for a continued effort on the part of the people themselves has not ended, nor will it ever end. But there is every reason for encouragement, every reason to believe that there is a real and sure foundation for the hope of human progress. The faith of America has been justified by the works. The salvation of America will be secured by the continuing efforts and sacrifice of its people."

The social climax had a fitting setting in the great hotel dining room with its pillars of white. Green palms and soft lights added to the beauty. Every table was filled with beautifully gowned women and distinguished men. The speaker's table was on a raised platform, and above it swayed American flags. It was both a beautiful and inspiring picture.

FINAL SESSION TODAY

The Commercial and Publicity and Advertising, Accounting and Technical Sections held their final sessions during the day, with the closing meeting of the General Session scheduled for ten o'clock this morning. Following the report of the committee on the election of the new Association president, there will be an interesting program of papers and discussions, winding up the most important convention of the American Gas Association yet held.

The general exodus of members from Atlantic City will be on in earnest by noon today, although a number of the convention visitors have made arrangements to remain at the shore over the week-end.

Ralph Hayward was golfward bound yesterday.

State Committee—What It Is and How It Functions

By Joseph B. Groce, Director New England Bureau of Public Service Information. Read Before the Open Forum Conferance at Hotel Chalfonte.

In discussing this subject with you today, I must, of necessity, be more or less personal in regard to the New England Committee, with which I am working and with which I am most familiar. The New England Committee, however, was formed only a little more than a year ago, and in its organization, therefore, followed in the footsteps of the Middle State Committees, which inaugurated this idea of State Bureaus of Public Service Information.

The underlying purpose of these State Committees, directing the State Bureaus, is the establishment of a better understanding between the Public Service Companies and the public. Up to a few years ago, the Public Utility Industry (next to the farming industry the second largest in the United States), in which is invested more than $15,000,000,000, had been building and not saying much about it; had been wrapped up in its own affairs and had not thought much of the attitude of the great public whom it was serving. The industry had taken for granted a great many things and was, shall we say, astonished when it really found that this great American public was also taking for granted the indispensable service they were receiving. So long as the public had its gas regularly on tap, its telephone service, its electricity, and its street cars, it gave little thought to the tremendous amount of money necessary to give this service, nor the consequence if these services were permanently suspended.

About four years ago, the Public Utility Industry of the State of Illinois, realizing that each branch of the industry had many problems common to all, formed a State Committee and started the publication of a *Weekly News Bulletin*. Those great pioneers of the industry, Samuel and Martin Insull, realizing the absolute necessity of public good-will, the necessity of laying the cards on the table, face up—calling a spade, a spade—were the pioneers in this movement.

Even though we directors of these State Bureaus, here assembled, are direct participants in this movement, I think we can prophesy with becoming modesty that this work we are doing is going to be of immense value to the industry, in the years to come.

In most of the states where committees have been formed, the committee consists of a representative group of the leading executives in the four branches of the Public Utility Industry—gas, telephone, central station electricity and street railway. The New England Committee, serving the six New England states, consists of eleven men—two representing the gas industry, two representing the telephone industry, two representing the central station electric industry, three representing the combination gas and central station, and two the street railways.

May I be personal and tell you who those men are, that you may know what a representative group of executives we have in New England? Mr. Dana D. Barnum, president of the American Gas Association and of the Boston Consolidated Gas Company, is one of our committee; Mr. H. T. Sands, chairman of the Public Relations Section of the National Electric Light Association, is another; Mr. Barnes, president of the Cambridge Gas Light Company, is another; Mr. C. L. Edgar, president of the Boston Edison Electric Illuminating Company, and Mr. E. A. Barrows, president of the Narragansett Electric Light Company of Providence, R. I., are members; Mr. E. W. Longley and Mr. C. S. Pierce, both vice-presidents of teh New England Telephone and Telegraph Company, are members; Mr. H. T. Edgar, of the Stone & Webster Company, is a member; and Mr. A. E. Childs, president of the Massachusetts Lighting Companies, Mr. C. V. Wood, president of the Worcester Consolidated and the Springfield (Mass.) Street Railway Company, and Mr. D. A. Belden, president of the Massachusetts Northeastern Street Railway Company, represent the street railway interests.

All these State Committees are voluntary associations, few of them have any formal organization—save a chairman, vice-chairman, secretary and treasurer. In many states the director of the Bureau acts as secretary, and in some states as treasurer also. In only a few states has the State Committee any by-laws. Most of the State Committees were first established by the getting together of the leading executives in the industry in the state, and the selection by those executives of a smaller group to act as the State Committee. In some states not all branches of the industry have been represented on the State Committee, but I think I am correct in stating that in every instance the gas and electric industry is always represented. The Bureau of Public Service Information operated under the direction of these State Committees are dependent for their support on the voluntary contributions of the various Public Utility Companies in the state.

This movement, as you all know, is in the interests of the *Public Utility Industry* **as an industry,** and not in the interests of any single branch of the industry. The State Committees, through the work of the Information Bureaus, are not trying to sell more gas, nor electricity, a greater number of telephone calls, nor more street railway rides. It is not a selling proposition in any sense of the word.

These State Committees are not, in my judgment, trying to spread direct propaganda. The whole proposition is one of *education*. An honest attempt on the part of this great industry to educate the American people to a better understanding of the Public Utility Industry, the absolute necessity of the industry for the comfort of life and the development of the country. A real honest-to-God purpose to show the American people how closely their everyday life is tied in with these servants who are at their beck and call—twenty-four hours of the day and three hundred and sixty-five days in the year.

The real function of the State Committee, therefore, is to reflect to the public, through the Bureaus of Public Service Information, and the work these Bureaus are performing, the bigness of the industry *as an industry*, and the frank, open, square policy under which our Public Utilities are being run today.

Our New England Committee gets together on a regular day, at a regular hour, once a week, at luncheon, to discuss the material which has previously been submitted to them in manuscript form for publication in the *Weekly News Bulletin*, and to consider such business as may properly be brought before them by the Director of the Bureau. This is the formal business of the committee, but consider for a minute what the informal getting together at luncheon, once a week, of this group of men means to the industry as a whole. The gas and the electrical business is still competitive, the telephone poles and wires still sometimes interfere with the electric transmission lines, and vice versa, the traction wires are also tied up pretty closely with both. There are many big independent telephone companies outside the big Bell System. But in these regular meetings of the State Committees the big idea is the good of the industry as an *industry*, and all these various branches of the industry are meeting on common ground and for the good of all.

Unfortunately, it seems to me, many of the State Committees do not get together regularly. This may be due to many conditions and especially to the great distances in our big states. But I do know that in Illinois and New England, the members of the State Committee consider these regular weekly meetings as important as any meetings in their business life.

The real function of the State Committee,

then, besides passing on the material to be issued in the *Weekly Bulletin*, raising the money to support the Bureau, determining the policy of the Bureau in its issuance of publicity material in every form, is to "sell" the idea to the Public Utility Companies themselves.

There are at the present time twenty State Committees. If all these State Committees are imbued with the spirit of the bigness of the industry as an industry, and command the directors of the State Bureaus to eat that idea, drink it, and dream it—wherever they are and whatever they are doing, it will not be long before the thinking people of these United States will wake up to a realization of what this great big industry means. We think in New England that Harvard University is "some pumpkins," and yet the Harvard University Committee on Economic Research does not seem to know, or at least does not wish to acknowledge, that there is such an industry as that of the Public Utilities.

It is a day of slogans. Let our slogan be—THE PUBLIC UTILITY INDUSTRY *AS AN INDUSTRY*—working through these splendid State Committees, made up of some of the biggest men in the industry, who are giving their best brains to the all important problem of educating the American people to a better understanding of this great industry. Let us fully realize that this is not propaganda, but a real public service—for the happiness of the American home, the foundation of the country itself and its material prosperity, is absolutely dependent on these great Public Utilities. In helping the people to realize this fact, we are helping in the work of wiping out the "tearer down"—the socialist and the anarchist, and are building for the future a more prosperous and contented nation.

Doherty Exhibit Attracts Attention

The large space and elaborate display of the subsidiary concerns of Henry L. Doherty & Company proved one of the most instructive points in the convention exhibit. Something of considerable interest to the general public at the present when coal is so difficult to get is the compact little furnace gas heater which can be installed in either a hot air furnace or steam or hot water system furnace to take the place of coal. A test is being conducted in one hundred houses in Denver for the purpose of securing figures for comparative costs of the system with that of coal. Other exhibits are confectionrs' furnaces, as used by leading candy manufacturers, and a small automatic device for distilling water for garages, which form recent additions to their well known line of larger products.

State Committees

(*Continued from Page* 470)

there is more to say about gas that has not been said. And, what is more, the plan was born in the gas branch of the public utility industry, and therefore gas is entitled to get the most out of it.

CUSTOMERS MUST BE PLEASED

Mr. Mullaney said in part:

"No public utility company can be continuously successful in these days of public utility regulation if its public relations are out of kilter. If our customers (the public) dislike us they will not willingly buy merchandise and appliances of us, they will pay bills grudgingly and less promptly, and they will swamp us with complaints; if they dislike us the most blatant and transparent demagogue will find them ready listeners. If they dislike us they will not—at least not before the millennium comes and all government ceases to be political—*they simply will not* let us get a square deal in rates; and without adequate rates dividends decline, financing becomes more and more difficult and the downward path becomes steeper and slipperier at each step.

"But what has all this to do with State Committeees on Public Utility Information?. It has everything to do with them because state committees on public utility information, rightly conceived, properly organized and intelligently operated are the best agency yet invented for developing better public relations in the gas and all other branches of the public utility industry. It is called 'best' because it *works* in a score of states; because, in proportion to the effort and money expended, it is getting results beyond anything ever achieved by enterprises of similar or analogous purpose in this or any other industry. That is a broad assertion. Be assured that its breadth is fully realized; and there it stands, awaiting challenge by anybody who is so minded.

"The state committee gets results: (1) because it is predicated upon correct principles and is therefore fundamentally sound; (2) because it is practical in recognizing that we are in a world of 'is'es' instead of a world of 'ought to be's'; (3) because when properly organized and intelligently operated, it utilizes the ways and means of communicating *information* to the public in the mass that experience has proved to be the right ones.

"INFORMATION—that is the cornerstone and most of the foundation of the state committee plan: information as distinguished from argument, propaganda and special pleading.

GOOD RESULTS ACCOMPLISHED

"What results have been accomplished by State Committees on Public Utility Information?

"Among results noticeable in states where committees have been at work long enough to make an impression, are the following: (1) the public utility industry is generally in better condition; (2) rate controversies are much less frequent, rancor has largely disappeared from them when they occur, the public appears to know much more about the whyfores of rates, and suggesting a square deal for utility companies no longer provokes a riot; (3) newspapers contain much less that is unfavorable, and are learning that operations and enterprises of utility companies make news that is quite as interesting as the 'knocks' that used to predominate; (4) regulatory bodies are finding it increasingly easier to give the utilities a square deal because public opinion is better informed; (5) utility securities generally are in better favor and financing has become easier; (6) utility company employes generally are in better favor and financing has become easier; (6) utility company employes generally appear to be developing a better and more helpful morale.

"State committees are not responsible for all of this improvement, of course, but they must be responsible for much of it, because state committees are the only distinctly new influence or agency for affecting public opinion and public relations which has come into the situation in recent years. When the patient begins to improve on the new medicine, it is only fair to give it some of the credit.

"Why is the State Committee Plan better than other schemes for educating the public?

"A properly constituted state committee represents all of the public utility interests in the state. Thus, as the whole is greater than any of its parts, an agency that represents the entire public utility industry can do more for the gas business than the gas business alone can do for itself, because the elements of special interest and special pleading are eliminated.

"A properly constituted state committee is composed of the leaders of the industry in a given state, who furnish the driving power. Execution of details is committed to men of special experience in this kind of work; for he assured there is as definite a technique in this, even though it be not so obvious, as there is in building or operating a gas plant.

"The committee establishes contact with every newspaper of other publication in its state, friendly or otherwise. It keeps out of politics. It avoids controversies. When newspaper contracts are well established, it moves on to con-

tracts with commercial clubs, civic organizations and every other channel for the dissemination of information. *Then and thereafter its chief concern always is to keep flowing through all of these channels a steady stream of dependable information on the economics, the necessities and the enterprises of the public utility industry, in general and in detail, in all of its phases and aspects.*

GAS IS OLDEST INDUSTRY

"Why should the Gas Industry be especially interested in the State Committee Plan?

"Because the plan was born in the gas branch of the public utility industry and because gas ought to be able to get most out of it.

"The first state committee on public utility information was the Illinois committee. It grew out of an address made in March of 1919 before the Illinois Gas Association by Mr. Samuel Insul, President of The Peoples Gas Light & Coke Company of Chicago. In the next couple of years gas men did more than any others to get the plan before the public utility men of a dozen states and to get it started and on its feet.

"The gas business can probably get more out of this plan than any other branch of the public utility industry because there is more to say about gas that has not been said. Gas is old compared with electric light and power, the telephone and the trolley car, which date back only 40 to 45 years. It was established and without serious competition, and had been for many years, when they were born. They had to fight for a foothold and therefore had to make more noise about themselves. Then, too, there was a certain novelty and mystery attached to some of their operations which engaged attention. The consequence is they have been more often the subject of discussion and speculation on future possibilities.

COMMITTEES GIVE AID

"Does State Committee work supplant Public Relations work by the individual Gas Company?

"It does not. But it does add background and support and effectiveness to the work of every local gas company that is on its toes in respect to advertising, publicity and public relations. Eighteen committees, whose operations now cover 25 principal states, are doing exactly that.

"These committees give the local effort something to tie to. They are at work week after week—not spasmodically but continuously—spreading dependable information about the public utility industry—the economics of it and the interesting facts about it—and so making it *known* to the public. They are constantly lending support and giving aid to every legitimate local publicity and public relations effort. They are constantly collecting and disseminating ammunition —information—which the local company can adopt and fit to its local situation.

"The gas industry has a wonderful story as yet untold except in its very beginnings. The state committee plan, adequately utilized in co-operation with other branches of the utility industry, offers the gas business an opportunity to show the public that it still delivers more comfort and convenience per dollar of return than any other business in the world."

GROCE PRESENTS PAPER

Joseph B. Groce, director of the New England Bureau of Public Service Information, presented a paper, "The State Committee—What It Is and How It Functions," which described in detail the enormous ramifications of the wonderful possibilities which this branch of endeavor holds out. On another page will be found Mr. Groce's paper, in full.

Engineers

(*Continued from Page* 471)

4. Some Observations on the Use of the Doherty Washer Cooler as a Water Gas Condenser, by F. W. Steere.

5. History and Development of Automatic Control of Water Gas Sets, by C. H. Steady.

Mr. Waring then took the chair and the meeting listened to the reading of papers by Messrs. Steere and Wohrley on these subjects.

MR. STEERE'S PAPER

Mr. Steere's paper was concerned with a discussion of the method of, and the principles underlying the operation of the Doherty Washer Cooler with a brief outline and definition of the process. This apparatus cools the gas by bringing it into direct contact with a portion of its own recirculated condensate, the heat from the condensate being removed before recirculation. In discussing the data required for washer cooler design, Mr. Steere said:

"In designing a plant for the removal of heat from Water Gas, the first thing that must be determined is the method to be used for removing the heat from the condensate before recirculation.

"The next consideration is whether the Washer Cooler tower will be located before or after the relief holder. If placed before the relief holder, it must have a sufficient cross sectional area to take care of the varying make, particularly if only one or two machines are to be operated. Placing the Washer cooler tower before the relief holder increases the capacity of the relief holder and reduces the loss of pressure through the relief holder connections."

In summing up his paper, Mr. Steere brought out the following points:

SUMMARY

"The Doherty Washer Cooler method of cooling and condensing water gas is both simple and direct. The method is theorectically correct and the results from numerous installations check with the theory.

"It is very difficult to get definite and conclusive data on the saving of oil, but there is evidence of an appreciable saving, especially on the larger installations.

"There is no doubt about the effectiveness of the washer cooler as a tar extractor. It is not possible to completely remove the tar by any mechanical washing and scrubbing device, but the benefits of the washer cooler on tar extraction become immediately apparent in the increased life of the purification material.

"From the standpoint of heat removal alone, the outstanding feature of the Doherty Washer Cooler is the direct and efficient method of heat transfer.

"Within the past year several installations of this process have been made where sea water is being used over the cooling coils. This offers possibilities for many plants where fresh water is expensive, but sea water at low temperature is available in unlimited quantities.

"It is possible that a higher degree of operating skill is required to operate and maintain a Doherty Washer Cooler installation, but the resulting benefits are more than worth it. The gas industry, like all other basic industries, is steadily tending toward more refined and efficient equipment. The unmistakable tendency of the gas companies to adopt better condensing apparatus is an important item in the evidence to support this observation.

"In conclusion, I might say that possibly the best proof of the fundamental soundness of this method of cooling and condensing gas is the fact that a great many plants have replaced their tubular condensers with washer coolers, but I have yet to hear of a washer cooler being replaced by a tubular condenser."

Mr. Wohrley then read his paper, which is found in abstracted form on another page of this issue.

DISCUSSION OF THE STEERE AND WOHRLEY PAPERS

The discussion of the Steere and Wohrley papers was opened up by the chairman, Mr. Waring, who asked whether it had been definitely determined whether it was more advantageous to place the scrubber-condenser before or after the

relief holder. J. A. Perry had a few remarks to make regarding the location of the washer cooler with respect to the relief holder and stated that the Doherty system was satisfactory but required a man to operate the apparatus while the cooler did not. This form of condenser is satisfactory provided there is a plentiful supply of cooling water.

J. S. Haug read his discussion of the paper, in which he questioned the advisability of using the relief holder as a condenser which is done by locating the scrubber cooler after the same. He pointed out that there was a gain in capacity when the condenser is placed before the relief holder. R. S. Carter then told of his experiences in using the Doherty washer cooler and the difficulty encountered with tar emulsions. Mr. Earl, of Rochester ,asked about the advisability of doing some research work on the proposition of recovering the waste heat in cooler waters, etc. Mr. Willien suggested the use of wood shavings in conjunction with the Doherty Washer Cooler. E. H. Bauer told about the difficulties encountered with the Doherty apparatus in purifying a gas containing napthalene. . Mr. Haug had something to say about the Wohrley paper, asking the question whether it was ever necessary to use two stage condensing apparatus. Messrs. C. J. Hauschildt, of Davenport, Iowa; Willien, L. B. Eichengreen and Griswold also took part in the discussion.

The chairman called upon Mr. Steere to close the discussion on his paper. He said that the position of the Doherty Washer Cooler with respect to the relief holder was not difficult to decide in the case of old plants, and that in the case of new plants it was merely a question as to how much money the company had to build the plant. Mr. Wohrley then closed the discussion on his paper.

F. C. WEBER TAKES THE CHAIR

The chair was taken by Mr. Weber, who first asked for an expression of opinion from the members as to the advisability of continuing the practice of holding a single session in the place of parallel sessions. There were no expressions of opinion and on a rising vote the meeting was declared to be overwhelmingly in favor of single sessions.

The new chairman asked the members to suggest new lines of work to be followed out during the coming year. Mr. Morgan had the suggestion to make that the craking of oils used in the manufacture of water gas be investigated inasmuch as the data and theories available up to the present time are all concerned with paraffine base petroleums, while the oils being used at the present time are mostly asphalt base.

The Eternal Feminine

(*Continued from Page 476*)

funny walk of yours, how could you help it?" The brute!

Have I told you about the sand artist? Well, he's not here I guess, at least I've never seen him. But his pictures are great! There's one—I think it's of Abraham Lincoln—which sure is fine. Then there's a blacksmith and a preacher, also a man with a dog. The dog reminds me of your dog that got run over by a Ford. Did I tell you that it said "Welcome A. G. A?" That means "Welcome American Gas Association."

Have I told you about that mysterious faucet at the exhibition? I think I did, but maybe not. All the women are interested in it. There's water coming out of it all the time, but no pipe going into it. The sign below says "It's running water. Where does it come from?" I chased around to it about three times before I got up enough courage to ask some man in charge where the water did come from. He didn't seem to want to tell me at first, said it was a secret that couldn't be told until the last day.

Went to the cooking demonstration this morning. Now I know why the juice always runs out of my pies. It's because I try to stretch the crust over the tin instead of having it shaped big enough to fit. I'm ever so glad I went. Got some dandy recipes too.

Guess what kind of flavoring Mrs. Peterson, I think her name is that, uses. She mixes a bottle of vanilla, of orange, and of lemon together and uses a teaspoonful of the result. What do you suppose it would taste like? She says people at her home for a meal always ask her where she buys her flavoring, they like it so well. I bet it would be good.

Then she told how to make cake. It sure looked easy the way she did it. She makes a white cake out of the foundation receipt she gave us just by putting in the whites last.

Learned a lot about gas too from some real interesting motion pictures shown for the first time. Just think, if all the pipe used to distribute gas were put about the earth's circumference, it would go around three times. And if all the gas tanks were collected in one place, they would cover all the state of Rhode Island.

I'm going to look up Harry, for I want to be sure that he'll be ready in time for the banquet tonight. Hope I don't get lost again as I did this morning, looking for him. Aren't the hotels awful these days, so many doors and stairways and things? After I had chased all over to find the writing room, where I was supposed to find him this morning, I finally asked one of the porters where on earth the room was. He pointed to a door right back of me saying, "There it is." I felt like a fool.

Well, I must go now.

Oceans of love,

HAT.

Teach Women How Easy Cooking Can Be Made

That Is Plea of Mrs. Anna J. Peterson, of Chicago, Who Makes Pleas for Preservation of Family Unit

"If we who are in the gas business will show the average woman how easy it is to get cooking results, and how she can provide for her family without any extraordinary effort, in fact with ease and economy, we will not only once more get the American nation around the dinner table at night and preserve the family unit, but also greatly increase sales," declared Mrs. Anna J. Peterson yesterday afternoon in an address in Haddon Hall on "The Relation of Home Cooking to Gas Sales."

After pointing out the close relationship between the consumption of gas in the home and the efficiency of sales made by gas companies, she showed just how the use of gas can be encouraged and markedly increased. "No matter how much cause you have to congratulate yourself upon the efficiency of your other departments, you cannot afford to neglect the cooking load of domestic customers," she concluded.

Mrs. Peterson is representing the Peoples Gas Light & Coke Company of Chicago in a nation-wide movement to increase interest in cooking and in home life. In her work in the past seven months she has addressed more than 20,000 women in lecture demonstrations. The text of her address will be found elsewhere in this issue.

New Lambert Device To Save Lives Shown

In addition to the well known line of standard meters, manufactured by the Lambert Meter Company, of New York, the company's exhibit includes several scientific instruments for resuscitation and for the administering of gas to the respiratory system, which are the invention of D. N. Lambert, manager, who, with N. D. Lambert, treasurer, are in charge of the booth. This includes a device for artificial respiration which, it is claimed, does not injure the lung tissues as in the case of practically all former inventions for the purpose, which should be of particular interest to the gas industry for rescue work.

W. H. Jefferson, C. B. Coldwell, T. Sedgwick and Miss Amelia Willitts are in charge of the booth of the Cutler Hammer Manufacturing Company.

Stocks

(*Continued from Page* 469)

Denver Gas and Elec Fives, 95¼, 96¼. Unchanged.

Elmira Water Lt and Ry 1st Fives, 87, 91. Down 2.

General Gas and Elec Sixes, 85, 87½. Down 2.

Indianapolis Gas Fives, 89, 91½. Down 1.

New Orleans Ry and Lt 4½'s, 72, 75. Up 1.

Oklahoma Gas and Elec 7½'s, 102, 104. Unchanged.

Pacific Gas Fives, 92, 92¾. Down ¾.

Philadelphia Co Sixes, 99½, 100½. Down 1½.

Portland Gas and Coke Fives, 92¾, 93¾. Unchanged.

Texas Pr and Lt Fives, 92, 95. Down 1.

United Fuel Gas Sixes, 97, 98½. Down ¼.

United Lt and Ry 1st Fives, 87, 89. Down ½.

Wisconsin Edison Sixes, 99, 101. Unchanged.

Accounting

(*Continued from Page* 475)

white paper for bills, and modern type faces of not over ten point size. He opposed perforations on bills. He advocated advertising on gas bills.

W. A. Doering, of Boston, declared a salmon pink colored bill had proven best for that community, which had become accustomed to bills of that color.

E. C. Scobell, of Rochester, declared he had found customers like distinctive color in their gas bills, and he opposed perforations also.

G. M. Hergesheimer, of Philadelphia, favored white paper for bills as being cheaper and also more satisfactory in other ways. For advertising on bills he advocated the use of stickers.

F. R. Barnitz, of New York, expressed preference for a white bill and favored perforations.

Ernest Johnson, of Syracuse, asserted that standardized bills would create good will for the companies, but he said that advertising on bills tends to confuse customers.

J. W. Heins, of Philadelphia, favored the white bill, and said he had found it good practice to ask customers to check meter readings.

DISCUSSION ON METER SLIPS

A. R. Keller, of Syracuse, said the use of meter reading slips left for customers was convincing.

J. F. Wenchell, of Baltimore, said his company had found it possible to get bills into customers' hands within four days after meters were read and he therefore deprecated meter reading slips as unnecessary.

C. E. Reinicker, secretary of the section, speaking as a consumer, declared bills should be simplified, and James Lawrence, of New York, asserted that the company should put itself in the place of the customer.

O. F. Potter, of Newark, favored gas bill advertising, while Chairman Ewald Haase, who presided over the section yesterday for the last time—being succeeded by J. W. Heins of Philadelphia—said, that in his experience, gas bills had proven a valuable medium for carrying messages regarding service.

Dewitt Clinton, of Worcester, Mass., objected to the feature on Mr. Sauer's bill of "previous gas bill."

"We decline to admit there is a previous gas bill," Mr. Clinton said, and the delegates laughed as if they knew exactly what he meant. "It seems to me that 'previous gas bill' is an invitation to customers to—well, to have previous gas bills. We don't extend that kind of invitation."

Then Mr. Davidson's paper was read, and there was instantly a protest against it by A. E. Forstall, of New York. Mr. Forstall's objection was mainly against the use of the word "intangibles" as employed in Mr. Davidson's paper.

"That word intangibles makes a lot of trouble," Mr. Forstall objected.

A. W. Teale, of New York, suggested for the consideration of those who might object to Mr. Davidson's paper, that those items of which accountants take stock are not necessarily of plant items, but he declared also that "we sometimes have to take the plant record." He said that the financial record must be part of the accounting record.

"What should be included," he said, "is every expense without which the property cannot be constructed."

A. C. Klein, of Boston, said the distribution departments of the gas companies should take up the matter of keeping records, particularly in the matter of identifying items of construction expense, etc.

Mr. R. Scharff, of Pittsburgh, said his company—the Equitable Gas Company—keeps record by construction reports, saying that this would facilitate a reconstruction estimate when required.

O. F. Potter, of Newark, said, "it might be better to view it (continuous accounting) from the engineer's rather than from the accountant's point of view."

Before the session was concluded, Chairman Haase surrendered the chair to Mr. Heins, incoming chairman, and votes of thanks were given Mr. Sauer and Mr. Davidson.

Ridgway Looks Us Over

W. H. Ridgway, of Craig Ridgway & Sons, of Coatesville, Pa., was seen taking in the sights at the exhibit, and telling them the advantage of steam operated elevators for the man who has steam power at his disposal. We will bet he convinced some of them too!

HOMEWARD BOUND

Teaching Women to Cook Helps Gas Sales

Results Show Quickly, Mrs. Peterson Told Commercial Men Yesterday

More than twenty thousand women have attended the lecture-demonstrations of the Home Service Department of the Peoples Gas Light and Coke Company, Chicago, during the past seven months, according to Mrs. Anna J. Peterson of that department, in an address made yesterday afternoon before Commercial and Publicity and Advertising Section. She added that interest in home cooking is only an indication of the possibilities of arousing interest in this important branch of our service to the public. She asserted that it is possible to directly trace an increase in domestic gas sales to any sustained movement along the lines which her company is pursuing.

Mrs. Peterson said in part:

Before I had any idea of being a gas woman I was called into consultation by The Peoples Gas Light & Coke Company of Chicago to discuss the question of increasing the interest in home cooking. This is a question which is of paramount importance to every gas company because the encouragement of and the continuation of home cooking are vitally essential to its sales.

I was turned over to the statisticians of the company and was asked to look at acres of figures until I was completely dazzled by them, but finally I emerged in the possession of facts about gas sales that had never occurred to me. Of course, I had been interested in home-making all my life, had been a housekeeper for thirty years, and for all that time been a teacher and lecturer on domestic science and, therefore, I could understand the influence of home conditions on gas sales. But the figures with which I became acquainted, through the kindly efforts of the statisticians, brought me much information. I found that sixty per cent of the gas sold in Chicago was used through gas ranges. When in addition to this I learned that seventy per cent of the domestic consumers are served at a loss to the company, it became immediately apparent that a vital problem of the gas company at the present time is "How to increase gas consumption in the home through greater use of the gas range."

One Factor in Increasing Consumption.

Let me give you one concrete example which was brought to my attention at this time. The average consumption of gas for each consumer in Chicago is 2500 cubic feet per month. If a family which has been in the habit of serving a package breakfast food can be induced to serve oatmeal, which is more economical and than which there is no better food for growing children, by this one small change in their cooking habits, an increase of seven feet of gas per day is gained. This amounts to 200 feet per month, or exactly 8 per cent of the average family's consumption.

Think what it would mean to your domestic consumer accounts if they could be raised 8 per cent per month! By that one addition to the amount of food ordinarily cooked many of our customers now carried at a loss would be transferred from the debit side of our ledgers to the credit side.

To get at the conditions underlying the present so-called unrest which has affected home life, in exactly the same degree as it has affected business, we must take into consideration the aftermath of the war. We realize that during the war many women became wage-earners who had formerly earned their living by being home-makers. A large percentage of women whose children were past the early grammar school age found it desirable to obtain employment in stores, shops and factories, not only desirable but necessary because of the strain of high war-time prices, and in a measure neglected their home-making during this period of economic pressure.

The result of this shows in the training of the girl who is at present between 18 and 25, at which age you know a girl is supposed to marry. This girl did not have the advantage of being an apprentice to her mother in doing the work of the home. In many cases she left school at an earlier age than she would have under normal conditions and did not have the domestic science training which most public schools now afford. She went immediately from the elementary school or from the earliest year of high school into the store or factory herself and now when she is marrying she has no knowledge of cooking, the fundamental thing in home-making, and she has acquired a distaste for it because of her extraordinarily high earning capacity during the last few years and because the background of her home has not presented her with the proper training.

Factors Lessening Family Life.

These then are two of the reasons we take into consideration in reviewing the factors which have lessened family life to the extent which has proved alarming to commercial interests as well as social. Other influences which enter in are the automobile, the movie, the lack of housing, which has congregated numbers of persons into small spaces and has forced many families who desired homes of their own to resort to light housekeeping or boarding and which has been the impetus giving rise to the large number of restaurants and delicatessens.

Now the problem is: Is it possible for us to do anything to stem this tide? Must we admit that women no longer desire to be home-makers? That their fundamental interest does not lie in the welfare of their families? Or, are we to take the stand that human nature has not changed within the last few years, that the evidence with which we are confronted is merely an effect of an abnormal situation and that, with the return to sanity after the recklessness of wartime, we may expect to get back to some of the wholesome conditions which were the basis of American home life?

And it is because we firmly believe that *family life must be preserved* as a unit, that the tendency of the city to herd and to live in a casual manner is to be combated by every means possible, that we are throwing

all of our emphasis into spreading the propaganda of home life, and, of course, to further our own ends we do this through a greater interest in cooking.

Although we frankly state that we are promoting in every way a greater interest in cooking in order to increase our gas sales, we have another motive which we constantly keep in mind. Every public utility is confronted with the *problem of securing and retaining the good will* of its customers.

If we can make a woman feel that a gas company is something more than a mere institution which sends her a bill once each month, if we can sell her the idea that real service is always to be obtained when she visits, writes to, or telephones the gas company, she becomes not only a friend of ours, but an enthusiastic booster.

The Family Gathering.

As you know, the *three essentials of family life are food, shelter, and clothing,* and you never see these three factors arranged in any order but that which I have given—*food first.* In these days when our homes are heated by hot air or steam, we no longer have the hearth for a gathering place for the family. The only time the typical family gathers together is at meals. This is the opportunity for the influence of the parents to be felt, and if meal time means eating cold food from the delicatessen or carrying a tray in a cafeteria, the most valuable means of training and education in the home is time when gas will be the only house heating fuel. It is just as logical an end for us to work for, especially in the cities, as more adequate street cleaning and lighting, or the electrification of our railways. It is the end overlooked.

Home Cooking and Gas Sales.

Now, of course, a consideration of these social aspects of the question was not the only motive underlying the determination of The Peoples Gas Light & Coke Company to encourage more and better home cooking through the Home Service Department. The thing which The Peoples Gas Company is primarily interested in, and which every man here is primarily interested in, is gas sales. I do not for a moment overlook the fact that you are pushing by every means in your power industrial sales. We are looking forward to the not only to be desired by gas men, but by every one interested in a smoke-free town. I read recently some most interesting figures about the effect of smoke upon people's laundry bills. You see, I can't help bringing this down to my own housekeeping problem, in that it is necessary for me to set aside so much more each month for laundry, simply because my town insists upon using soft coal.

We work steadily, as I have said, upon the plan of increasing industrial sales. We are lending our influence, as are all of you, towards the adoption of gas as the house-heating fuel, but just at present 650,000 of the customers of my company are domestic consumers and many of them are carried at a loss.

20,000 Attended Lecture Demonstrations.

I have dwelt upon this at perhaps greater length than "Home Service" would justify, but I realize that every man here is confronted to some extent by the problem which we are attempting to solve in Chicago through our Home Service Department. How are we to change the habits of people with regard to cooking? Now I am in my element. I have been talking to you about gas sales, a subject of which you know much more than I, just to give you the background. But I have spent all my life dealing with kitchen problems, with the reaction of the community to these problems, and there is no doubt that the habits of the community in regard to the home, and specifically in regard to cooking, have changed.

The question you ask of me is "Can you increase sales of gas by a greater interest in cooking?" I can only answer that question by telling you exactly what we have done in Chicago during the last seven months. The series of lecture-demonstrations which we have inaugurated in Chicago has been attended by more than 20,000 women during the last seven months. I find they are willing to be led back to a greater interest in cooking. Just as you have become efficient in your position through knowing your work, women also whose work is housekeeping wish to know the best ways of doing it in order that they may become proficient.

Now to tell you specifically just how we have put into execution our solution of this problem. In the first place we have made our rooms as attractive as we possibly could. These rooms consist of a model kitchen in which are placed the most up-to-date gas range obtainable, a kitchen cabinet of white enamel, an ice box also of white enamel, a sink, placed at the correct height (of course, you men do not know anything about that, but there is no greater boon to the woman who has to wash dishes), an instantaneous water heater and open shelves, on which are all the utensils in aluminum and glass which are necessary in a home kitchen. This model kitchen is in no sense a salesroom; it is merely our workroom, but every woman who visits it takes away ideas for fixing up her own kitchen. She takes notes of the details, the way the curtains are hung, or the little shelf by the stove which holds the utensils needed at the stove. But she asks many questions about our gas-using equipment and she goes away knowing more about a gas stove or a water heater than she has ever learned before. I have had women tell me they had never used the broilers in their stoves, although they had kept house for five years; they didn't know what they were for. I have had hundreds of women ask me to show them how to regulate their ovens. A woman told me just the other day she had not baked a pie in four years because her oven didn't work properly. I asked her if it ever occurred to her to step to her telephone and ask the gas company to send a man out to adjust it.

And just here, before I go on to finish telling you about the rooms which are afforded for our use. I want to link up the connection between "home service" as a means of promoting gas sales and "home service" as a purely merchandising proposition.

Most gas companies have found it expedient to become merchants, at least to become sellers of gas-using equipment. This is not only an end in itself, because it is, as you no doubt have determined, a profitable source of revenue, but it is a means of protection for the gas company. Your appliance sales department invariably justifies itself.

If the woman who comes to the gas company to attend a demonstration on a biting cold March day passes a cheerful radiant gas fire type of space heater on her

way to our department, the first point of contact in getting her to become a purchaser of a gas space heater is established.

In the course of our demonstrations she sees the most up-to-date stove in use, she sees the ease with which I make use of a top lighter when lighting a burner; if she sees the immediate flow of hot water I get the minute I turn the faucet in my sink, she is impressed with the fact that my work proceeds more easily and more smoothly than hers does at home because I have at my hand the most efficient equipment possible.

Just to give you one further illustration. I am a staunch believer in temperature cooking. The two stoves in our department are of different makes, but each of them has an oven regulator. Somewhere I heard a gas man make this statement: "There is no doubt but that a regulator on a stove means the use of less gas." I find that women who have regulators on their stove are so much more certain of the results which they will obtain that cooking becomes a greater pleasure and they bake twice as much as they did before; for with most women it is only the lack of knowledge or the fear that their knowledge is not sufficient to insure certain results that keeps them from attempting many things.

The Home Service Department, as I have said before, is in no sense a merchandising department in itself, but it is keenly interested in aiding the merchandising department in every way. The man or woman who sees our water heaters in operation, who sees a washing machine, mangle or drier functioning adequately, has the practicability of these pieces of equipment brought home to him with a real vital emphasis which is lacking when he merely passes through a display room. And so, because I feel that most gas men consider the sales of gas-using equipment a vital part of their business and desire to make these sales as important as possible, I say that an efficiently working Home Service Department should be a real asset to the merchandising side of the gas business as well as to gas sales.

To come back to the housing of our department, the model kitchen is a background for a platform, from which the demonstrator at our lecture-demonstrations addresses her audience of interested women, who are seated in an open space accommodating about 200. This room is filled nearly every day for the lecture-demonstrations.

Then there is a model laundry, with its washing machine, drier, ironer, and water heater. An occasional laundry demonstration is given, showing the most up-to-date methods of washing and ironing, and the laundry also has an immediate practical value because all the laundering for the department is done here. Adjoining the model kitchen is a dainty little dining room which is used to show correct table setting and service. An office and a comfortable sitting room fill the rest of our space.

Now as to the service which we render. Every day there are visitors. An occasional woman comes just out of curiosity, but for the most part, our callers have learned about our work and come with real, practical questions which they wish answered. A young woman has recently married a doctor. She finds that he has a theory about using fruits which are cooked. She wants to serve some form of cooked fruit every morning for breakfast and she doesn't know how to make anything but apple sauce.

HOME COOKING

Teach 'Em to Cook, Says Mrs. Anna J. Peterson

A woman comes in and tells me she is spending $25.00 a week in order to get enough food for her family of six and the situation is desperate. She cannot afford this expenditure, but doesn't know how to reduce it. She is amazed, almost incredulous to find we will give her of our time and will afford her suggestions which will cut this expenditure 25 per cent.

Sometimes a mere man drifts in and asks me why his wife can't make the kind of pancakes he gets in a certain restaurant. Will I give him a recipe to take home to her?

Then at every hour of the day the telephone rings. If it is a hot summer day, perhaps someone asks: "What can I have for dinner that won't keep me in the kitchen all afternoon?" Or, "I have a crate of blackberries. Will you tell me how to can them and to make jam?" Or, "I am going to have company, six guests for dinner; what shall I have and how much shall I buy?"

Our mail service includes requests for recipes or questions about canning, pie-making, planning luncheons, or any of the thousand other things which enter into the housewife's daily work.

Lecture-demonstrations are given every afternoon at two. These are the best means of getting into actual contact with our public. Women come to them from all over the enormous area of our city, some of them taking an hour's ride on the street car in order to get downtown. They enjoy the gathering together in a meeting; they pay the closest attention and ask all sorts of questions that are stimulated by the association with others having the same interest; they go home enthusiastic about the work which we are doing with an entirely different attitude towards the gas company from

any formerly held by our public; and they put into execution and help their neighbors who aren't able to come to put into execution the plans which we have worked out for them.

We have tried various topics for lecture-demonstrations, but we find that straight cooking is the thing which attracts the most attention. Pie, bread, vegetables, salads, cakes, cookies and desserts are all subjects of unfailing interest.

To reach every customer of the gas company directly would be a sheer impossibility; so the department also includes a publicity service. Recipe cards, illustrated in colors, which are just the right size for filing, are sent out with each month's gas bill. These cards bear recipes, which are sure of a welcome in every home, for plain dishes, such as muffins, cake, shortcake, pie, with illustrations sufficiently alluring to make one want to try the recipes.

The co-operation of one of the metropolitan and several of the neighborhood newspapers has been secured and they carry weekly articles, menus, and recipes furnished by the department.

The members of the department make appointments with women's clubs throughout the city and give lectures or demonstrations or invite the clubs as groups to visit the department when a particular demonstration is arranged for their benefit. Sometimes a request comes for a demonstration before an evening school class or a settlement group.

And so to come back once more to the question which has been the only justification for me to talk to you this afternoon, the question of gas sales. No doubt you have listened to men at this Convention who have given you the very latest and most stimulating information in regard to the uses of gas for industrial purposes. Equally, you are converted—and have been for a long time—to the idea of pushing gas as the house-heating fuel. The function of the gas company as the proper place for the sale of gas-using appliances has established itself beyond the question of a doubt as a paying proposition. But you cannot for a moment lose sight of the fact that as long as we carry a large proportion of our domestic customers at a loss, we are not making adequate gas sales.

There is no doubt that the situation which confronts you may be just as serious as the situation which confronted us. Cooking has gone out of the home in many cases. You and your wife may go one night a week to the golf club in the summer for dinner, or downtown to a restaurant in winter, but be sure that these tendencies are not confined to your class.

So, no matter how much you may have cause to congratulate yourself upon the efficiency of your other departments, you cannot afford to neglect the cooking load of the domestic customers. These customers we have with us always, many of them at a loss, but they must be supplied whether we like it or not and so with all earnestness I suggest that you consider "Home Service" as the means of increasing gas sales.

Continuous Inventory of Fixed Capital.

Report of 1922 Committee Presented Yesterday by H. C. Davidson, Chairman, Consolidated Gas Co. of New York

The necessity of identification of the physical units of plant and property with the construction expenditures as shown by the books is generally recognized, and has become increasingly evident during the last few years, occasioned by fluctuating price levels which have brought the great majority of gas companies before some tribunal for adjustment of rates and have made essential a record identifying in some form the property represented by the values upon which a return is asked.

During the year 1921 a canvass was made of the larger member companies to ascertain the extent to which the continuous inventory was in use, and to learn the attitude of companies not maintaining such a record. The replies indicated a very general interest in the subject, although but few companies had actually installed an inventory record. From the reports of systems in use there appeared to be no standard as to the detail which should be shown in the inventory, and no generally adopted formula as to the treatment of overhead and intangible costs.

It was also apparent that the interpretation by the companies of what constituted a continuous inventory was not uniform, and that in some cases records of fixed capital based on job orders, identifying the construction costs by jobs, but lacking entirely the details necessary for an inventory, except by reference to original records, were deemed to be and reported as continuous inventory systems.

We have defined the continuous inventory of fixed capital as a progressive record describing in complete detail the physical units of property in such form as to provide complete identification of the property itself. Carried to its logical conclusion, such an inventory should give complete specifications—dimensions, weights, foundations, connections, etc.—either in full in the inventory or by reference to blue prints or engineers' field records on file in the Construction Department, and should provide the full data from which a valuation might be made by the application of unit prices to the inventory. An inventory in this complete form must necessarily be a voluminous record for the average plant, the maintenance of which will require an engineering knowledge of conditions at the plant, as well as a knowledge of accounting practices, and a staff adequate to keep the inventory in conformity with the actual property in respect of every item.

Advantages Generally Recognized

The advantages to be obtained from a continuous inventory, it is believed, are generally recognized, and as the subject was discussed in the 1921 report,

only brief reference is necessary at this time. The chief uses of a continuous inventory may be summarized as follows:

(1) For the identification of the existing property at any time represented by the expenditures as shown by the books.

(2) For proof of the physical property, to substantiate the cost or to prove reproduction value under all circumstances where proof of the property is necessary.

(3) To provide full details for determining the correct amounts to be written out of Fixed Capital, representing property withdrawn.

(4) To furnish information in connection with property reports required by taxing authorities and regulatory bodies.

(5) To furnish information in connection with insurance valuations.

The principal question involved in connection with the installation of a continuous inventory is the relation between the cost of keeping such a system and the value of the information and its use. The controlling factor as to the value of an inventory record in greater or lesser detail is the need of the information it supplies, which depends upon the individual conditions of each company.

In companies where the identification of the physical property with the books is impossible or incomplete—as in the case of the destruction of records by fire, or the lack of details resulting from a merger, etc.—and proof of the value or cost of the property can be established only upon a reproduction basis, the need of an inventory may be imminent at any time. Under such conditions the establishment and maintenance of a continuous inventory with complete specifications may be warranted, whatever its cost.

In companies having complete costs available from its inception, itemized by projects or jobs, from which records a detailed statement is maintained currently, or could be readily prepared if required, there is less occasion for a complete inventory, as the statements of fixed capital would probably serve every purpose for ordinary requirements.

The advisability of the adoption of the continuous inventory system, the plan adopted and degree of completeness to which it is carried, are therefore matters of executive policy dependent on existing conditions in each company.

The inventory based on original cost, where possible, probably provides the most useful record, in that it combines with the inventory data, proof of the correctness of the company's investment. Original cost, if it represents expenditures judiciously made, is an element usually considered in the determination of the value of a property, and is frequently required if the figures are available, even when reproduction values are claimed.

Assuming that the continuous inventory system is to be installed in a company which has been operating for a period of years, a complete inventory must be used as a base. If that inventory is made preparatory to the installation of the continuous record, it may be designed initially to follow out the plan adopted. If an inventory already made for some other purpose is used as a base, its existing form will govern to a large extent the plan to be employed in continuing it as a progressive record.

The maintenance of a detailed inventory combines engineering and accounting functions. It should be maintained under the charge of a competent engineer as the data to be gathered is largely of a technical character, but the services of the accountant cannot be ignored, and he should pass upon all matters of classification of the construction charges. In the larger companies the inauguration of an Inventory Department may be desirable in connection with the installation of an inventory, which department should be a medium between the Construction and Accounting Departments. Copies of all records pertaining to changes in the company's property, including contracts, vouchers, work orders or tickets, specifications, payrolls, etc., should be available to it. To obtain the maximum benefit from the Inventory Department, the company should invest such department with complete control of its capital accounts, and in addition the department should be conversant with all repairs involving changes in the physical property.

Procedure Will Vary.

The procedure to be followed in carrying on an inventory will vary according to the accounting practices of a company. In arrangement and classification, an inventory should conform to the system of accounts prescribed by the public regulatory bodies, or in the absence of such to the accounting system followed in the books, and should meet the needs of the engineer, for whom classification by buildings and contents or by types of apparatus will probably prove most suitable.

A record should be maintained of each construction job or project, subdivided into the classifications desired, with a separate sheet or card for each classification for the accumulation of data in connection with that unit. If a job order system is used, the posting of the details of the construction to the inventory will be made concurrently with charging Fixed Capital for the cost of the completed job. If construction expenditures are charged directly to the capital accounts, the monthly additions will become the basis of posting to the inventory.

A typewritten record upon forms of a standard size, with appropriate printed headings, and punched for a loose leaf binder, is believed to be adequate. It may be found desirable to make the initial entries in pencil in the working copy of the inventory before transferring the data to the permanent records.

For an inventory in complete detail, the separation of the record into three parts, to provide for convenience of reference and elasticity in the space requirements, is recommended, as outlined below.

(1) The detailed description record. This record should set forth on a separate sheet for each classification a complete description of the labor employed and material furnished, including details as to specifications, dimensions, quantities, foundations, attachments, etc., and each sheet should be cross-referenced by serial number with the page in the summary to which it is carried. If it represents a unit in the installation of a larger project the description should also refer to the com-

plete project, and a master record is suggested identifying the items making up the entire construction job. In connection with the labor costs, the number of hours employed, graded according to classes of labor, if available, will prove valuable if at some later date a reproduction cost is desired.

(2) The summary record, combining the individual units by buildings and contents or by functional groups. The description in this record may be summarized in a few lines sufficient to identify each item, showing the cost in one item, cross-reference to the details being made by the serial number.

(3) The recapitulation of fixed capital by the general classifications, arranged by district and location.

The reports of the canvass made in 1921 showed some companies to be maintaining a continuous inventory as part of the accounts in the Construction Ledger. If only limited detail is required, such practice may prove very satisfactory in an inventory based on original cost. We believe, however that under the average conditions a continuous inventory, even if restricted to the information available to the Accounting Department, will be found more convenient as a record independent from the books of account. If it is designed to include full engineering details, its incorporation in the construction ledger will not be practicable. An inventory based on an appraisal usually differs in form from the grouping of the accounts, unless it is the origin of the book figures, and under these conditions, if maintained as an accounting record, is more easily continued as a separate record. One company reported the abandonment of its detailed fixed capital figures as a part of its accounts, to eliminate the clerical detail occasioned by it from the rush period incidental to the monthly closing of its accounts.

For the construction records of mains and services, job orders are recommended giving complete data as to location, size, length and depth of cover, together with detailed labor and material costs, type of paving disturbed and cost of restoration. When possible it is desirable that the labor costs be segregated between the cost of earth excavation, rock excavation, backfilling, pipe laying, caulking, superintendence, etc. From these job orders summaries of the information desired for complete statistics as to average costs by sizes may be compiled. A sketch of the main or service laid, showing as to mains the location of each special and the position of the main in relation to the curb and other sub-surface construction, should accompany each job order. If main maps of the company's distribution system are kept, these sketches will also furnish the data for entering the changes.

In respect of overhead items and intangible costs in an inventory, there appears to be no standard rule governing the practices followed, except for the few major items which have become generally accepted by the accounting authorities. The amounts included by appraisal experts have not been uniform, either as to the items to be included, or as to the basis of allowance for each, with the result that Court and Commission findings, based upon the proofs offered, have established precedents in individual companies differing widely from other companies, and the continuation of property records along the lines thus laid down in specific cases tends to make permanent the lack of uniformity.

Good accounting practices require the inclusion and allocation of overhead items to individual projects as far as possible, but there are some items necessarily impossible of specific allocation, and others, such as engineering and superintendence, insurance, etc., which may be apportioned to the individual jobs or be carried in separate accounts under the indirect costs, according to the policy adopted. In the initial construction or upon large additions the overhead costs may be comparatively easily segregated and are usually capitalized, but in minor extensions are usually buried in operating expenses.

It is our opinion, therefore, that no standard routine can be recommended for the treatment of overhead and intangible costs of construction in a continuous inventory. Provision should be made, however, in designing an inventory for these intangible items, some of the more important of which are listed below:

- Organization and Development
- Engineering and Superintendence
- Interest during Construction
- Taxes during Construction
- Administrative & Misc. Expenses during Construction
  - Superintendents
  - Inspectors
  - Legal Expense
  - Insurance
  - General Expense
  - Office Expenses, including clerks, timekeepers, paymasters, etc.
  - Watchmen
  - Express, freight, cartage, etc., not applicable to specific apparatus.
  - Injuries and Damages
- Temporary Structures
- Buildings Demolished
- Repairs during Construction

COMBUSTIBILITY OF COKE

Further work on the combustibility of coke and relative re-activity with carbon dioxide is being conducted by the Southern experiment station of the United States Bureau of Mines, Birmingham-Tuscaloosa, Alabama, in co-operation with the Pittsburgh, Pa., station of the bureau. Two variable properties of coke, namely, its combustibility and rate of oxidation or "solution" in carbon dioxide, are believed to play an important part in its performance in the blast furnace. It has been stated that the ideal coke should come down to the tuyere zone without oxidation by the carbon dioxide in the stack gases (Gruner's ideal working) and should there burn rapidly carbon monoxide. Laboratory scale tests for determining relative combustibility of cokes and their reactivity with carbon dioxide have been developed and a number of by-product and beehive cokes tested.

Must Advertise Intensively.

John F. Weedon a Strong Advocate of Continuous Publicity

Advertising to be successful in the gas industry must be employed consistently, continuously and intensively, John F. Weedon, Superintendent of Advertising of the Peoples Gas Light and Coke Co., Chicago, told the members of the Commercial and Advertising Sections yesterday afternoon at its third session held in the Vernon Room, Haddon Hall. Mr. Weedon added that advertising can only do its best work when it is thus employed.

Mr. Weedon declared that the Peoples Gas Stores, in Chicago, are selling merchandise and appliances successfully and at a profit in competition with department stores that specialize in complete household equipment. "Advertising," he said, "is a large part of the reason why of this."

Mr. Weedon, in his talk which was received with a great deal of interest said, in part:

In 1921, for example, gross sales of the Peoples Gas Stores were 41 per cent ahead of their best previous year. This year—1922—gross sales promise to be 25 per cent ahead of 1921 and 75 per cent ahead of the best year previous to inauguration of a definite merchandising and selling plan, built around advertising. These percentages given are dollars and cents percentages. As good as they are, they look still better when you consider the downward price market of 1922.

These Stores have $16,000 and $18,000 days so often that such days no longer excite anybody. They have $8,000 and $10,000 days in August. They are established in the consciousness of the buying and shopping public; for it is always a shopping public when women dominate the purchases as they dominate the purchase of gas store merchandise and appliances.

Part Played by Advertising

Crediting these and like results to Advertising is not saying that Advertising, alone and unaided, did it all with its brass tacks and its little hammer for driving them. There was a definite merchandising and selling policy and program, backed by hard work intelligently applied. There were better salesroom facilities at the main store down town. There were better display windows. There was more attention, plus professional skill, given to making window displays attractive and meaningful, both at the main stores and at branch stores. There was also, and especially, an organization of salespeople who put intelligence plus enthusiasm into their work. But none or all of these factors could have produced the results indicated—and certainly not in the same length of time—without the aid of Advertising to "tell the world."

Versatility of Advertising

The honest advertising man does not claim that advertising does all of the selling. He does claim, and daily demonstrates, that advertising brings customer and salesman together and creates an "atmosphere" favorable to salemaking as no other agency does or can, because it can and does employ, and focus for sale-making, influences which the salesman cannot employ without "scattering" and diverting attention from his main purpose of closing the sale of a particular piece of merchandise.

By our advertising we have established the logic of our business. What more natural or experienced place to buy gas appliances than Peoples Gas Stores? We have demonstrated to thousands of housewives the economy and the wisdom of buying from experts. We have successfully impressed upon buyers the fact that our service to them begins when we purchase our merchandise.

In other words, we buy to serve not merely to sell. And in doing this, we have sold our internal organization to itself. That is no small factor in the profitable conduct of a business such as Peoples Gas Stores.

The Peoples Gas Stores sell some merchandise that is not strictly "gas" merchandise or appliances. Whatever may be the differences of opinion on the consistency of this, Advertising has been able to make good use of the circumstances.

The merchandise in question fits in with "gas" merchandise and appliances. It is for use along with gas appliances—for the kitchen and kitchen adjuncts—cooking utensils, kitchen cabinets, refrigerators, kitchen cutlery and the like. Advertising seizes upon this to lift the Peoples Gas Stores out of the class of sellers of a few useful and necessary but not especially attractive articles like gas ranges and water heaters. It creates for them the character of real stores, in the sense that women unconsciously think of "stores": places where they will find interesting and varied stocks of merchandise—"complete kitchen equipment," practically everything for the "operating department" of the home—places that appeal directly to women's instinct for "shopping."

Consistent, Continuous, Intensive

Advertising does its full share of the work it can do only when it is consistently and continuously employed and, for a gas company or any other localized business, it needs to be intensively employed. In discussing this, all concerned should have the same conception of the terms used. Therefore, in speaking of "intensive advertising," let us agree that we mean a close, continuous, persistent practice of publicity, using every medium possible that offers a reasonable prospect of increasing our business and improving our relations with our customers, and selecting advertising mediums with an eye always to making the returns justify the expenditure. It is, of course, not always possible to trace directly results of each individual advertisement, but even when results are most difficult to trace, keeping everlastingly at it emphasizes a faith in your institution, your service, and your goods, that is eventually transferred to

the public through the insistence and persistence of your announcements.

NEWSPAPER ADVERTISING BEST

The most obvious advertising medium is, of course, the newspaper. This is so, not only because practically everybody reads the papers, but also because they have, by their newspaper reading, formed the habit of looking in the papers for announcements of desirable merchandise for sale.

Newspaper space should be used continuously throughout the year; spasmodic advertising activities produce only spasmodic results. Sales curves by years show that we have peaks and valleys at various seasons. Our own efforts have been directed with considerable success toward reducing the distance between the peaks and the valleys. This has been done, not by slacking off in the dull season, but by deliberately attracting "out of season" buying.

For its newspaper advertisements, I would recommend that a gas company *adopt a standard form or style*. If you are going to establish yourself as a seller of good merchandise, at "right" prices, which you must do to win, you will want your "ad" to be easily found and recognized by people who may be interested in your class of merchandise.

Advertise Several Items

We used to consider it necessary to say a great deal about the article we were advertising. This ate up space and encouraged the practice of advertising only one or two items at a time. Our practice now is to put ten and twelve items into about double the space formerly used for only one or two—each item with a cut, a brief description and the price, and still take room for some general editorial talk about the Stores. We believe the "power of suggestion" conveyed by the ten or a dozen different items, plus the editorial, has done much to establish the Stores as *stores*, having varied lines of merchandise—places to go shopping.

When I say we are selling our stores, I mean that we are also selling our internal organization. We emphasize the importance of buying from a trained organization.

The purchaser who goes away satisfied is the one who comes back. When a housewife knows an organization is composed of individuals—men and women—trained to an understanding of her household needs, she buys with greater confidence for she is really assured beforehand of satisfaction.

Getting Copy O. K'd.

An advertising man sometimes has to submit his copy for O. K. to "higher ups" who are probably highly cultivated specialists in some line, other than advertising. Their opinion on an advertisement of an article for which they seldom or never are in need of themselves is generally of very little value. The advertising man knows that the scrub-lady or the window washer's approval on this particular article is probably more important.

Professional Assistance

If you have no professional advertising man in your organization or one who has had such training—for there is a wide difference between the touch of the professional and that of the average amateur or dilettante in advertising as in piano playing—get one or get the help of a local advertising agency. It pays to have any kind of work done well—especially advertising. The little—if anything—that agency assistance will cost you will be well worth while in bringing to bear the more extended experience of an agency upon your merchandizing problems, while matters of technical detail and company policy can be watched and guided by company men. Advertising campaigns, even in companies already having fairly well organized advertising departments, are better planned and better executed, when the "outside" point of view is brought to bear by an agency; adequate appropriations sometimes more easily obtained because there are more people to argue for them and, besides, it is a human weakness, to which even gas company executives are not immune, to treat the gentleman called from next door with more consideration than might be extended to an immediate member of the family.

Good "Position" for Your "Ad"

Unfortunately the public utilities as advertisers do not seem to have earned the respect of the average make-up on a city newspaper. He seems to think that a gas company "ad" can be shoved in anywhere. If there is a hole on a page into which your "ad" fits, in it goes, without regard to the subject matter of that page. Gas ranges are as much out of place on a market report page, for instance, as they would be in the Congressional Record, and it is heart breaking to see a real live Gas Company "ad" under death notices. But such things will happen continuously unless you make a sharp protest and demand the same showing for your advertisement that other advertisers get for theirs. After a while, if you make a vigorous complaint every time your "ad" is wrongly placed, the make-up man will realize that it makes less trouble for him to treat your copy with consideration and give you a fair show. This is a matter in which an advertising agency can also generally render valuable service. We have practically overcome this in Chicago, although accidents will happen.

Advertising Appropriations

I do not know if there is any fixed ratio between gross receipts for merchandise sold and expenditure for advertising that might be taken as standard, but reputable and successful merchandizers of our class of goods in our city figure around four cents on the dollar.

The expenditure for "good will" and "policy" advertising should not be imposed on merchandise advertising. The account should be divided to show exactly the expenditure for each. This will also help to fix proper conception of the advertising expenditure as, not an "expense," but an *investment* that helps earn a "net."

Our own advertising expenditure not so very long ago used to run about one and seven-tenth cents on the dollar received for merchandise and appliances. We raised this to an average of 3.7 cents and for the period covered by these figures our net profits increased nearly 60 per cent, which leads us to agree that "it pays to advertise."

No form of merchandise advertising is equal to, or a substitute for, newspaper advertising; it not

only helps sell the goods but incidentally helps build general good will. But use of newspapers need not and should not prevent utilization of other mediums to supplement the newspaper.

Fences and Holders

The company's physical property offers many opportunities for supplementary advertising. The appearance of a gas plant is enhanced if the fence surrounding it carries a well painted sign. Gas holders can be, and frequently are, excellent locations for signs or for carrying an advertising message.

Bulletin Boards

If well painted, well built, bulletin boards are available, they serve valuably as direct "reminders" to the public at a time when the individual may be on pleasure bent. It should be borne in mind, in approving copy for a bulletin board, that the average length of time it operates on the mind of the man in the street, is estimated to be only three seconds. Therefore, to be effective your message must be short; the shorter the better.

Trucks and Wagons

The company's trucks, meter wagons, and drip wagons, can be made traveling bill boards. Posters on them should be pleasing in design and color, and particular care should be taken that no dirty, torn, or defaced posters are allowed to remain on any wagon.

Catalogs or Booklets

Elaborate and expensive catalogs are mostly a waste of money and effort. Small booklets, with a good title and an attractive "pick-me-up" cover design, of a size that will easily slip into a woman's hand bag or a man's pocket, are much more popular with the public and more effective advertising mediums.

Advertising on Gas Bill

My personal bias is entirely against using the gas bill for advertising merchandise. To do so is bad psychology. At times it must be like offering a big plate of corned beaf and cabbage to a man suffering with indigestion. Some literature should accompany the gas bill but it should be more in the nature of good recipes, or chatty, informative, and interesting literature.

Company Stationery

Company stationery that goes to the public—envelopes, letter paper, wrapping paper, of course—should carry a gas company message. The message must, of necessity, be standardized and more or less indirect advertising, the main purpose being to create in the minds of the public, by continual reiteration, the fact that the gas company is ready, willing, and anxious to serve the public in every department relating to the use of gas. If a man sees on bill boards, posters, company stationery, company wagons, and company property the simple sentence, for instance, "Buy gas ranges from the gas company," the natural reaction will be that the first time he is confronted with the need to buy a gas range, the company will be the first concern he will think of in connection with the purchase. It is just as simple and natural as following a finger pointing on a

ADVERTISE!

JOHN F. WEEDON
"Make Your Wants Known in Good Black Type"

"This way, please" sign, which we frequently see and always obey when we find ourselves in a strange place.

Street Barriers

We have found the barriers which are used to guard street openings useful for displaying a sign in pleasing color and design. They also serve to distinguish our street openings from those of other corporations and, when we make a practice of scrupulously caring for openings, they should do much to allay the allegation that the gas company is "everlastingly tearing up the street." A "Decal" sign is best for these barrier boards, for door panels on automobiles, trucks, for the store windows or any place where there is a smooth surface.

"Decal" Signs

In this kind of supplemental advertising the gas company should select an institutional design, bearing some standard message to the public, and reproduce it as often as possible on every available surface.

Display Windows

Good display windows are a great asset, and if

your building is not provided with one you may find the cost of remodeling a good investment.

In speaking of newspaper advertisements, I advocated a permanency of style; for display windows I recommend frequent and radical changes. The displays should, of course, tie up with the season and emphasize the articles offered for sale in your current advertisements. Here again the help of the professional is to be preferred to that of the amateur if it can be had.

Window Trimmers

Mechanically moved objects, or a good looking live demonstrator, will invariably attract people to your windows, but it should be borne in mind that merely to attract people is not enough; an accident will draw a crowd. What is wanted is to sell the crowd something, if no more than the idea that they "can do it better with gas." Gas appliance units in their bare outlines do not conform to any known school of art design, and they need the embellishments of background and setting to make them attractive enough to "sell themselves."

Good display windows are not only valuable adjuncts to successful merchandising; by adding to the brightness and attractiveness of the public thoroughfare they also become begetters of good will.

Importance of Good Appliances

Gas companies exist primarily for the manufacture and sale of gas, but if there were no appliances through which to utilize gas, their occupations would be gone. The evil which has been done to the good name of the industry by the sale of improper appliances is absolutely incalculable. Every badly constructed, badly adjusted, burnt out or broken down gas appliance on a consumer's premises is an insidious and constant creator of ill-will towards the company, no matter where the appliance was bought, or what it cost. The gas company should keep up a constant campaign to eliminate them.

CONCLUSION.

In conclusion let me emphasize the extreme importance to a gas company that its customers should be using only up-to-date approved appliances, and that company management should consider its merchandising as seriously as it does its engineering and legal problems.

Good Results Plus

Merchandising—Advertising—Selling—are a trinity that can be employed to remove this clog of bad appliances, at least, on gas company progress and prosperity, and (not the least of their merits) they will pay their own way while they are doing it and will pay the company a bonus in profits for the privilege of doing it.

Recovering Ammonia While Condensing and Scrubbing Gas

Simultaneous Operations Described by J. H. Wohrley

The meeting of the Technical Section, held yesterday afternoon in Convention Hall, Steel Pier, heard an address by J. H. Wohrley, of H. L. Doherty & Company, New York City, on "The Proper Scrubbing and Condensing Facilities in a Coal Gas Plant and Their Effect upon Ammonia Recovery."

Mr. Wohrley went into considerable detail to explain the process of condensing and scrubbing of coal gas and pointed out that these two processes were formerly regarded as independent operations. He indicated that in the Doherty Washer Cooler these processes, as well as those of the extraction of tar and the removal of ammonia could be carried out in a single shell or a series of shells. The advantage in saving of space and ease of increasing capacity of plants, which have such apparatus, was said to be among the chief advantages of the Washer Cooler. The construction and the operation of the apparatus were described in considerable detail and a balance sheet, showing the method of determining the total ammonia balance, was given. The article follows in part:

From time to time gas companies have been confronted with problems of plant expansion, which included increased scrubbing capacity in order to provide for the production of a gas commercially free from impurities. A desire to secure the maximum capacity and efficiency at the smallest investment, and at the same time utilize a minimum amount of valuable space, has led to the investigation of the possibility of designing a form of apparatus which would provide for combining the condensing scrubbing, extraction of tar, and removal of ammonia, in a single shell or a series of shells.

Apparatus of this nature has been designed and in successful operation for several years. In scrutinizing the kind and type of equipment that is found in use in many plants, and in comparing this with the apparatus that is actually necessary to accomplish the same results, it appears that there is an opportunity for simplifying scrubbing and condensing equipment and working toward a recognized standard type of equipment, to be used in new construction, and also as a guide in revising old installations, which is in many instances made necessary, due to need for increased capacity.

It is surprising to find, especially in many of the smaller plants, that the actual purification costs are abnormal, due largely to defective scrubbing. The best of oxide is rendered useless in very little time due to becoming fouled with condensed vapors that should have been removed in the scrubbing system. The loss of residuals is excessive, and in many cases the gas to the holder becomes fouled with sulphur due to fouled oxide. The distribution of such gas presents another destructive feature which is familiar to all gas engineers.

The complete scrubbing of the gas is therefore a matter of vital importance and it is necessary to admit a clean quality of gas to the purification system even though it may require that a small percentage of vapors be sacrificed to do so. The ultimate results attained will in general be more satisfactory when reviewed from the financial standpoint. The layout, which will accomplish simultaneous condensing, scrubbing, etc., embodies the use of the Doherty Washer Cooler. As stated above, this type of apparatus has been in successful operation for several years. A washer cooler of four sections is shown, but the number of sections may be increased or decreased to meet the requirements.

The apparatus consists of a primary scrubber located ahead of the exhauster. The cooling of the gas from the foul main temperature to approximately 70 deg. F. is brought about in this scrubber.

The saturated scrubbing liquor is brought into direct contact with the gas. Therefore, an intimate contact is brought about between the condensed vapors, the gas, and the medium which is to absorb and carry away the heat. In the water cooled tubular condenser the transfer of heat must take place through the metal of the tubes.

[A detailed description of the operation of the apparatus was given.]

Cooling Coils

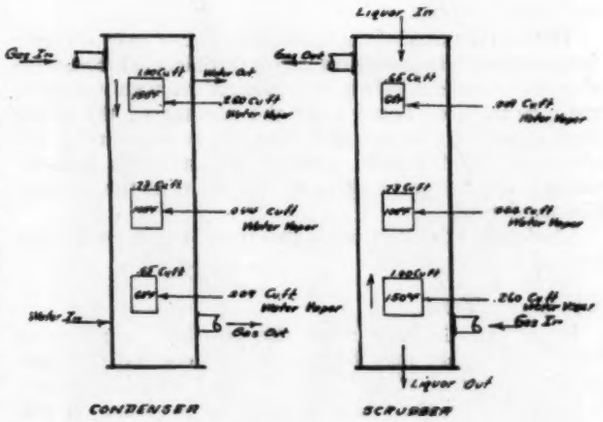
The matter of securing the proper amount of cooling coil area and the most economical type of coil is a very important one. It is probable that the best type of coil is made by using pipe and return bends. Our experience seems to indicate that 2-inch pipe gives a greater efficiency than larger sizes. The cooling water should be admitted uniformly over the top pipe, descending by gravity to the bottom of the stack. The hot circulating liquor should enter the bottom of the stack. Any design which allows the cooling water to splash from the coils should be avoided, since in such a case a large portion of the cooling water may be ineffective for cooling purposes.

The table shows the amount of liquor necessary and the sq. ft. of cooling coil required per M. cu. ft. of gas passed for various inlet temperatures where the gas is to be cooled to 70 deg. F.

Per "M" Cu. Ft. of Gas Per Hour		
	Gal. per Min.	Sq. ft. Coil Area
120	.26	6.6
125	.29	7.9
130	.31	9.3
135	.34	11.1
140	.37	12.8
145	.38	14.4
150	.45	17.9
155	.51	21.6
160	.59	26.3

Where gas is entering the shell at 150 deg. F. at a rate of 100,000 cu. ft. per hour, 45 g.p.m. of liquor would be required to cool the gas to 70 deg. F., with a coil area of approximately 1,790 sq. ft.

The following sketches are given to show the principal difference existing between the action that takes place in the ordinary tubular condenser and that which takes place in the tray-filled shell. Assuming a tubular water cooled condenser with cooling water and gas flowing in counter-current, a cu. ft. of coal gas entering at the top at 150 deg. F. will contain approximately .26 cu. ft. of water vapor. By the time the gas is cooled to 100 deg. F. the vapor content will have been reduced to approximately .04 cu. ft. In cooling from 100 deg. F. to 60 deg. F. only a comparatively slight amount of additional water vapor will be condensed.



Therefore, the main bulk of the hot condensate will pass downward through the condenser along with and in contact with the gas, requiring that the heat which it carries be absorbed by the cooling water flowing upward. This transfer of heat must necessarily take place through the tubes of the condenser, the conductivity of which may be greatly influenced by their physical condition.

Scrubber Fillings

In the foregoing discussion the matter of fillings used in shells of this kind was touched upon. Many different kinds of fillings have been used, consisting of coke, excelsior, shavings, and wooden trays of various designs. Other types of fillings such as broken agricultural drain tile, and small blocks of wood piled at random in the shell have been used. Recently a type of filling has been developed by the Chemical Construction Company which is reported as being a very efficient and durable filling. It is known as the "spiral ring" type and is undoubtedly familiar to all gas engineers. Other forms of chemical fillings are also in use.

In considering scrubber fillings, there is a very important factor affecting the final efficiency of the filling, and that is its uniformity. The flow of gas must be uniform throughout the filling and the distribution of the gas must be equal throughout the filling. The gas will be deducted from any section of the filling offering greater resistance than any other section. In cases where the filling is non-uniform the gas will pass through the larger openings, where less surface is presented. The descending liquid will follow sections presenting the greatest amount of surface. For this reason, in order to bring the liquid and gas into intimate contact, the greatest care should be used in providing

for a uniform design of filling. A disturbance between the balance of the flow of gas and the contact surface is sufficient to cause a very great reduction in the efficiency of the scrubber. This condition is very likely to exist where scrubbers are filled with coke owing to the difficulty of securing a uniform distribution of the coke throughout the filling.

[Curves were shown indicating the effect of kind of material and spacing upon the surface area secured.]

Scrubber Sprays

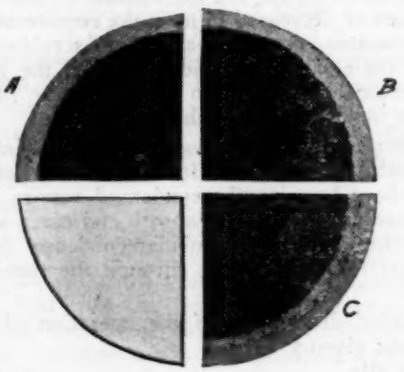
The distribution of the scrubbing liquor over the surface of the filling has offered a problem of considerable importance. Where it is desired to evenly distribute quantities of liquor over the surface of the filling contained in a circular shell, the rotary distributor will give very good results. This type distributor was developed several years ago, and is known as the Traver-Griswold type.

[A detailed description of this type of distributor was given.]

Operating Tests

Regarding the matter of the possible reduction in temperature that may be attained, where the principle of direct contact of gas and saturated scrubbing liquor is made use of, the following diagram is given. It will tend to show the temperature conditions resulting when various rates of liquor are used in the shell. The flow of gas remained practically constant at 26,000 cu. ft. per hr. and the cooling water to the coils was kept constant at 6 gal. per minute. The shell used in this case is 3 ft. 8 in. in diameter and contained approximately 15½ ft. of trays made of ¼ in. x 6 in. material with ⅜ in. spacing. The saturated scrubbing liquor is distributed over the trays by means of a rotary spray built upon the plan of the one described elsewhere in this discussion. It will be observed that the most effective heat removal takes place with the smaller rates of flow of scrubbing liquor, in which case the temperature of the gas inlet to the shell and the liquor outlet approach each other quite closely. It is found, however, that the use of larger volumes of liquor through the shell has an appreciable effect upon the amount of tar removed at this point. The following tests are given to show the comparative amounts of tar present in the gas, with the shell by-passed, and with the shell in operation using different rates of flow of liquor. A tar camera as manufactured by the Steere Engineering Company was used and 1/10 cu. ft. of gas was metered through the filter paper in each case. No attempt was made to determine the amount of tar quantitatively, but the color will serve to show the extent of the removal under the conditions stated.

In the foregoing test the experimental data is given as it was taken. No attempt was made to maintain the temperature of the gas at the outlet from the scrubber constant at approximately 70 deg. F. To have done this would have required that the cooling water to the coils be increased to at least the amount of the circulating liquor through the scrubber. It will be observed that the quantity of the cooling water was kept practically constant at 6 gallons per minute. It will be observed also that the curves of "temperature of gas at outlet" and "temperature of liquor inlet to shell" follow each other quite closely, which is an indication that the scrubber is working properly, with the proper distribution of both gas and liquor. Had the cooling water to the coils been increased as noted above with each increase in circulating liquor, giving due consideration to the radiating surface of the coils the "temperature of the gas at outlet" would have remained uniform at about 70 deg. F. In this case, the "temperature of liquor outlet from shell" would have been much lower. If it were desired to cool the gas from 134 deg. F. to 66 deg. F., then 8 gallons of circulating liquor would be required per min-



Showing Tar Content of Gas at Outlet of 3'-8" Primary Scrubber Under Following Conditions:—

A—Scrubber By-Passed

B—Rate Flow Scrubbing Liquor=14 G.P.M.

C— " " " " =23 "

ute with 6 gallons of 60 deg. F. cooling water per minute. Theoretically, 8 gallons per minute would be necessary in either case, since both liquids have approximately the same specific heat. However, there is some difference due to radiation and due to a certain amount of atmospheric cooling, depending upon the relative humidity.

Advantages of Washer Cooler Installation

There are several advantages secured from the washer cooler installation, which may be stated as follows:

1. Minimum cost of maintenance and operation.
2. Minimum space required.
3. Does not require buildings except for pumping equipment.
4. Construction simple with no moving parts.
5. Maximum cooling efficiency secured.
6. Capable of reducing temperature to the point most favorable for complete removal of ammonia.
7. Provides for the admission of clean gas to the purifiers free from tar and ammonia, thereby making possible the maximum recovery of those by-products.

Ammonia Recovery

In considering the problem of the satisfactory re-

moval of ammonia from the gas by proper scrubbing of the gas on its way from the hydraulic mains to the purification plant, there may be certain conditions existing which will have a very great bearing upon the actual amount of ammonia recovered and the amount to be accounted for even after the ammonia has been removed from the gas, and is collected in the form of weak liquor. In general the sum of the total ammonia leaving the scrubbing system in the form of weak liquor and the ammonia contained in the gas leaving the final scrubbers will represent the total amount of ammonia produced, exclusive of the following losses.

1. Leakage of weak liquor from separators, storage wells, sumps and pipe lines.
2. Escape of ammonia from the surface of weak liquor in storage wells and sumps.
3. Loss of ammonia liquor that may be carried to tar liquor storage well.
4. Failure of sumps and seals to discharge into weak liquor storage well.

Of the above four possible losses, the first two are generally likely to be the most serious. It is needless to say that all pipe lines, fittings, valve stem packings, etc., in the ammonia system should be completely free from leakage. All containers of weak ammonia liquor should be provided with tight covers to prevent circulation of air over the surface of the liquor. Where tight covers are provided the air over the liquor will become saturated and a vapor tension balance will result between the liquor and the vapor. If air is allowed to circulate over the surface of the liquor this balance will not be reached and there will be a continuous loss of NH^3 into the air.

Ammonia Balance

It may be said at this time that a means of determining the ammonia production and certain portions of the losses, is given by the total ammonia balance. This balance is an analysis showing the amounts of ammonia produced, lost, recovered for sale, and sold. It should include the place and amount of each of the losses that are possible to determine.

In order to be of any practical value to gas operators, any systematic method of checking up suspected losses must be simple, rapid and reasonably accurate. The following method of making an ammonia balance is given as a possible means of fulfilling the above conditions. While the method is not strictly accurate in every way, it will, however, give results sufficiently accurate for the purpose intended.

In making a balance of this kind it is first necessary to determine the total amount of ammonia produced. All of the ammonia present in the gas as it passes from the retorts, must either appear in the scrubbing liquor or pass away with the gas from the final scrubbers assuming that no losses exist. Both the amount contained in the liquor and the amount carried away in the gas can be determined with a fair degree of accuracy, over any period of time. Knowing the weight and total ammonia content of the liquor in the storage well at the beginning of the period, and the same at the end of the period the actual pounds of ammonia produced in the weak liquor may be found. Also knowing the rate of flow of gas and the ammonia content of the gas at the outlet of the scrubbing equipment the actual pounds of ammonia lost in the gas may be determined for the same period.

J. H. WOHRLEY

His Description of Methods of Scrubbing and Condensing Gas a Notable Feature of Yesterday's Session

In most cases where the production of ammonia is scrutinized as indicated above, a full production of ammonia will be present. The production of ammonia is very much like the production of coke or tar, in that there are few ways in which it can be limited under ordinary operating conditions. In the absence of convincing evidence to the contrary it may be assumed safely that the usual amount of ammonia is in the gas leaving the retorts, and that any case of low residual credit is traceable to certain losses either in liquid or gaseous form between the hydraulic main and the purchaser's tank car.

The ammonia produced as noted above must either be accounted for as sales or losses. The losses in the gas leaving the scrubbers have been measured. Also the actual pounds of ammonia produced in the weak liquor has been determined which is the ammonia to be accounted for after concentration.

The ammonia produced as weak liquor is then admitted to the concentrator and it then becomes necessary to trace it through this operation to determine what actually becomes of it. In doing this it is neces-

sary to sample and analyze the waste liquor from the concentrator, and determine the per cent NH^3 by weight. The weight of this waste liquor over the given period of time may readily be determined from which the total loss of ammonia from the concentrator is determined.

Knowing the rate of weak liquor input to the concentrator and the per cent NH^3 by weight of this weak liquor, the actual pounds NH_3 put into the concentrator may readily be determined. All ammonia put into the concentrator must either appear as loss from the concentrator or as concentrated liquor in the receiver. Therefore, the sum of the losses and the ammonia recovered as concentrated in the receiver should balance the input to the concentrator.

As a concrete example of the application of the above discussion the following total ammonia balance is given:

Weak Liquor Storage Well No. 1	
Liquor at beginning of test, Pounds	70,000
Total NH^3 at beginning of test, Per Cent	2.00
Total NH^3 at beginning of test, Pounds	1,400
Weak Liquor Storage Well No. 2	
Liquor at beginning of test, Pounds	100,000
Total NH^3 at beginning of test, Per Cent	1.90
Total NH^3 at beginning of test, Pounds	1,900
Weak Liquor Storage Well No. 1	
Liquor at end of test, Pounds	50,000
Total NH^3 at end of test, Per Cent	2.20
Total NH^3 at end of test, Pounds	1,100
Weak Liquor Storage Well No. 2	
Liquor at end of test, Pounds	75,000
Total NH^3 at end of test, Per Cent	2.30
Total NH^3 at end of test, Pounds	1,725
Summary of Storage Wells	
Total NH^3 in W. L. at beginning, Pounds	3,300
Total NH^3 in W. L. at end, Pounds	2,825
Difference in Storage	475
Weak Liquor to Concentrator	
During test, Pounds	50,000
Av. strength of W. L. to Concentrator, Per Cent	2.10
Total NH^3 during test to Concentrator, lbs.	1,050

Total ammonia produced in weak liquor during test
$= 1{,}050 - 475 = 575$ Pounds

	Waste Liquor from Concentrator
During test, Pounds	65,000
Total NH^3 in waste liquor, Per Cent	.01
Total NH^3 in waste liquor, Pounds	6.50
	Ammonia in Gas at Scrubber Outlet
Av. No. grains NH^3 per 100 cu. ft. gas	2.50
Gas made during test, cu. ft.	1,200,000
Total NH^3 lost in gas during test, grains	30,000
Total NH^3 lost in gas during test, Pounds	4.29
Summary of Scrubbing Operation	
	NH^3 to account for
NH^3 lost in gas during test, Pounds	4.29
NH^3 produced in weak liquor, Pounds	575.00
NH^3 to be accounted for, Pounds	579.29
Tons coal carbonized during test, Pounds	100.00
NH^3 to account for per ton coal carb., Pounds	5.79
Total NH^3 lost in the waste liquor, Pounds	6.5
Total NH^3 received in concentrated liquor receiver, Pounds	1030.0
Total NH^3 unaccounted for, Pounds	13.5
Total NH^3 admitted to concentrator, Pounds	1050.0

Recapitulation of Scrubbing and Concentrator Operation

	Pounds per Ton Coal	%
NH^3 lost in gas from Scrubber	.043	.74
NH^3 lost in waste liquor	.036	.62
NH_3 recovered in receiver	5.634	97.36
NH^3 unaccounted for	.074	1.26
	5.79	100.00

It may be observed that 1.26 per cent of the total ammonia produced is not accounted for from the operation of the concentrator. This may be due to the following possible leakages.

1. Escaping vapors at overflow, catch pot or from receiver.
2. Leakage of liquor from valves, pipe lines, fittings, etc.

UTILIZATION OF NENANA LIGNITE

One of the main problems connected with the development of the mineral resources of the interior of Alaska is that of providing a suitable and cheap fuel for mining operations, declares the United States Bureau of Mines. Hence the Alaska experiment station of the bureau, located at Fairbanks, since its installation in 1916 has been vitally interested in encouraging the use of lignite from the Nenana field. Many conferences have been held recently with mine operators and others regarding the advantages of lignite and the equipmnt best adapted for using it. A heating plant designed for burning lignite was installed at the station and used throughout the winter of 1921-22. It served the double purpose of heating the station and of demonstrating that lignite can be used advantageously and economically for domestic heating. A series of steaming tests were conducted under the boilers of the Alaskan Engineering Commission's electric light plant at Anchorage, Alaska, to determine the relative efficiency of the Nenana lignite in comparison with bituminous coal from two mines in the Matanuska field. The results show that, pound for pound as fired, the evaporating power of the lignite is 87.5 per cent and 89 per cent, respectively, of that of the two bituminous coals. Since the opening of the Nenana field in 1918, increasingly better grades of lignite have been discovered in each new mine until that of the latest—which was used in these tests—shows by analysis but 19.4 per cent moisture, 8.1 per cent ash and 9.080 B.t.u. per pound as received.

DETERMINATION OF GAS IN BOILER FEED WATER

Work is being done at Pittsburgh, Pa., by the United States Bureau of Mines on a portable method for determining the dissolved gases in boiler feed water, especially hydrogen. Some boiler feed waters have been found to contain more than 30 per cent hydrogen.

Sell Coke as Better Fuel Than Coal, He Says.

Fletcher, of Providence, Advocates Care in Manufacture of By-product

"Education of the public to the proper methods of burning coke, not as a substitute for coal, but as a better and more efficient fuel," constituted the keynote of a most interesting and important address, delivered before the meeting of the Technical Section, held yesterday morning in Convention Hall, Ocean End of Steel Pier. The address was delivered by R. L. Fletcher, Assistant Engineer of Manufacture, of Providence Gas Co., of Providence, R. I.

It was pointed out that the gas industry can develop the use of coke for domestic and industrial purposes in the place of coal and other fuels, if it pays the proper attention to the manufacture of coke of suitable quality for such purpose. It was not to be expected, it was said, that a good coke with all the desired properties could be produced automatically as the by-product of gas manufacture. Proper attention had to be paid to the technical details of the coke making process, the selection of suitable coals and their use in the best condition, and it was similarly pointed out that, in order to be able to develop this important field, coke positively should not be considered as a by-product. Details of the manufacture of coke were described, including the purchase of coal, the storage of coal, the preparation of coal, and the carbonization of coal. This constituted the first part of the paper, and the second dealt with the various separate parts of the method of preparing coke for sale. Mr. Fletcher's address follows in part:

THE MANUFACTURE AND PREPARATION OF COKE.

Why have we been so negligent and so slow to develop our coke market? The answer is simple and short—because we are gas men. We have always admitted it—we have even boasted of it. Because we are gas men, public utility men operating gas monopolies, we have put forth our efforts to produce and distribute a perfect product, "gas." This is commendable and right. However, we should not be just "gas men" and gas companies. We should be gas and coke men, gas and coke companies.

Coke *positively* should not be considered as a by-product. You gas men that question this statement and question the economic advisability of producing better coke in your own plant will perhaps be willing to look upon this subject from a philanthropic or patriotic point of view.

We operate gas monopolies but we do not have a monopoly on light or heat. Our coke must compete in heating with the various solid and liquid fuels. In the East this applies mostly to anthracite, while in the West mostly to bituminous coal.

Unfortunately, the Eastern public is educated to anthracite fuel and, consequently, prejudiced against coke. There are, of course, thousands who burn coke because they know that coke is better than anthracite, while probably as many more burn coke because it sells at less per ton than anthracite, but the main percentage of the public burns anthracite because it is used to it and disinclined to change and perhaps because the fathers and grandfathers never used any other fuel.

We producers of coke, who know that properly prepared coke is better and worth more than anthracite, have then two channels in which to develop and expand our coke sales. The first is education of the public to the proper methods of burning coke, not as a *substitute* for coal but as a better and more efficient fuel. Most all coke producing gas companies have realized the necessity of this and have made in the past few years more or less headway. The second channel is to produce a coke that approaches anthracite in its burning properties to meet the demand of those who are accustomed to anthracite.

Pulverization of coal also improves the cell struc-

R. L. FLETCHER,

Gas Engineer of Providence, R. I., and Protagonist of Coke As the Best Fuel

ture and hardness of the coke produced. Outside of the cost of installation, pulverization of coal is not expensive. The use of pulverizers has been limited, I believe, to coke ovens, and although it has been reported that "incidental objections to the use of fine coal for retorts are such as to discourage its use," I cannot agree and do not see why these incidental objections cannot be overcome. However, while I feel that the mixing and pulverizing of coals can be successfully and economically applied to retort practice, I fully appreciate that it is probably too much to look for any rapid developments along this line.

Considerable could be written here of the need of the coke producer and foundryman getting together. This in itself would constitute a paper of considerable length. Suffice it to say that the average foundryman knows but little of the characteristics of the oven man's product, while the oven man needs closer relationship with the foundry and better understanding of the foundryman's work and troubles.

Water Gas Coke.

The general specifications for water gas coke can be summed up as follows:

Size—Above all a uniform size is desirable.

Ash.—The ash in most coke produced today is acceptable.

Moisture—There is a tendency for gas plants to produce coke high in moisture. Needless to say, it is desirable to have low moisture.

Fusing Point of Ash—Generally speaking, a medium low fusing point (2300-2400 deg. F.) ash is desirable.

Volatile Matter—Since volatile matter is generally significant of the hardness of the coke, it should be low—1½-2 per cent.

PART I. THE MANUFACTURE OF COKE.

The successful marketing of coke depends, first of all, on the manufacturing of this product and not upon the preparing of the product. The salient points of manufacturing can be summed up as follows:

1. **Purchase of Coal**
   - a. Coke making quality.
   - b. Screened or unscreened.
   - c. Pool or straight mine coal.
   - d. Ash content.
   - e. Fusing point of ash.
   - f. Sulphur content.
   - g. Iron content.
2. **Storage of Coal**
   - a. Deterioration by heating.
3. **Preparation of Coal**
   - a. Crushing or breaking.
   - b. Removal of tramp iron.
   - c. Mixing of coals.
   - d. Pulverization.
4. **Carbonization of Coal**
   - a. Size of chamber.
   - b. Control of heats.
   - c. Speed of carbonization.

1. Purchase of Coal

a. Coke making qualities.

The gas man who wishes to improve or study his coke product should begin with the purchase of coal or coals which are to be used in his manufacturing plant.

Two coals from different regions or seams having practically identical analyses will produce, under the same carbonizing conditions, coke of radically different physical characteristics. This refers to the size of cells, thickness of cell wall, cross fracture, tendencies, toughness, hardness, etc. These characteristics are of vital interest and importance to the oven operator and should be to the retort operator.

The coking qualities of a coal are sometimes expressed by the hydrogen oxygen ratio. In general in a good coking coal, the ratio of hydrogen over oxygen should be above 0.60.

Coals might be divided into three classes from a coke making viewpoint: (a) high volatile gas coal, ranging in volatile matter from 30-38 per cent and producing a quick burning, fingery, friable coke having thin walls and open cell structure; (b) coking coal ranging in volatile matter from 22-30 per cent, which gives a far superior coke than Class (a). This coke is less fingery, has a denser cell structure and stronger walls. (c) Low volatile coal ranging in volatile matter from 16-22 per cent. This coal when coked would produce a coke approaching anthracite in physical characteristics but is impractical because of the expanding nature of the coal during its coking period and low yield of products. If, however, mixed with Class (a) coal in proper proportions, an excellent coke is produced which does not have the fingery, spongy and open cell structure characteristics of Class (a) and gives a fair yield of products.

Before contracting for a large supply of an untried coal, it often pays to run trial coking tests with small samples. This can be easily done by making a small light gauge steel container, filling with coal and placing in the retort or oven with the charge. While this does not duplicate all of the conditions of the actual carbonization, it is practical enough to give the gas man a good line on the coking characteristics of a coal.

b. Screened or unscreened coal.

Coal screened over a ¾-inch screen usually costs approximately twenty-five cents more per ton. With certain coals, this increase in cost is warranted. Coke produced from screened coal is naturally lower in ash and sulphur.

c. Pool or straight mine coal.

Changes in the characteristics of coke produced have been oftentimes traced to pool coal. It is advisable if possible to purchase a coal from certain mines or group of mines operating on the same seam, and not a pooled coal.

d. Ash content.

It is desirable from all viewpoints to purchase low ash coal.

e. Fusing point of ash.

Generally little or no consideration is given to the fusing point of the ash. The majority of the common gas coals have a fairly high fusing point. The Fairmont field, West Virginia, and a few others are exceptions. For domestic coke a reasonably high fusing point is desirable, while for water gas manufacture, a lower fusing point is oftentimes specified.

f. Sulphur content.

Sulphur content of a coal is a little bit misleading

at times. This subject has been fully covered by the University of Illinois, Bulletin No. 111 (A Study of the Forms in which Sulphur Occurs in Coal), wherein it is pointed out that sulphur existing in a coal may appear more in the coke than the gas and vice versa. Needless to say, it is always desirable to purchase low sulphur coal.

g. Iron content.

The iron content of coal ash if high can hurt greatly the sale of coke merely from the spotty, rusty appearance.

2. Storage of Coal

Heretofore much has been written and there have been many discussions on the loss in heating value, yield of gas, tar and ammonia on stored coal. Little has been said regarding the deterioration in coking properties of stored coal. Coke oven operators have often noted that stored coal affected the characteristics of the coke produced and are careful accordingly in their selection and storage of coals.

3. Preparation of Coal

a. Crushing or breaking.

There are two commonly used methods of preparing coal for coking, namely: (a) crushing and (b) breaking. Gas plants throughout the country use a crusher of one type or another, while practically all coke oven plants use a breaker. The main distinguishing difference is that the breaker automatically separates all foreign material, such as stones, slate, tramp iron, sulphur balls, etc., over 1½ to 2 inches in size from the coal and passes it into a separate storage bin, while the crushers crush all of this material with the coal unless it is hard enough to break the shearing pins.

b. Removal of tramp iron.

Tramp iron in coal is sometimes removed by magnets supported over the conveying belts or by a magnetized pulley. In cases where the coal contains a considerable quantity of tramp iron that is not removed by the crushing or breaking machinery, the magnet method may solve the problem.

c. Mixing of coal.

The advantages of mixing coals to improve the coke have already been discussed. The present method of accomplishing accurate mixing is by means of mixing belts. These belts run towards each other. By varying either the speed of the belts or height of coal or both, any predetermined mixture may accurately be obtained. Some plants mix three coals together.

d. Pulverization.

In the first part of the paper, it was mentioned that pulverization of coal helped to improve the quality of the coke produced. The advantages of pulverization are as follows:

(a) The ash in the form of slate is, of course, pulverized with the coal. As the pulverized coal carbonizes in the oven or retort, the coking takes place more uniformly and produces stronger and more regular cell walls.

(b) When a large sized piece of coke is examined, it is very easily noticed that at almost each cross-fracture, a small piece of slate is located. This fracture is caused by the difference in the coefficient of expansion between the coke and the slate. Pulverization of the coal decreases, therefore, the tendency of the coke to cross-fracture on quenching. In other words, pulverized ash distributed throughout the coal strengthens the resulting coke and produces a larger sized coke.

(c) When two or more coals are mixed, the pulverizer obviously acts as a thorough mixer and thus helps to produce a coke of more uniform structure.

(d) From a domestic consumer's point of view, pulverization of the coal is desirable. He obtains no unburned carbon under his furnace or range grate and has, therefore, no cinders to pick over. Many of our consumers have felt that this was a mighty important feature of our product.

4. Carbonization of Coal

a. Size of chamber.

The size and shape of the carbonizing chamber affects the size, shape and quality of the coke produced. The wider the chamber, the more over-coked will be coke adjacent to the heating walls and, consequently, the greater will be the difference in physical properties of each piece of coke from its wall end to its center end. The wider the chamber, the greater will be the formation of sponge coke.

Since coke tends to fracture along lines perpendicular to the heating wall, it is obvious that the shape of the coke will be characteristic of the shape of the chamber.

b. Control of heats.

The proper and accurate control of heating the carbonizing chamber has an important influence on the character of the coke made. Over-coking produces a smaller, harder, brittle coke, while under-coking produces blocky, tough, but soft coke having black ends and a bad appearance.

c. Speed of carbonization.

The speed in which the coal is carbonized also plays a part in the characteristics of the coke produced. Fast carbonization makes a smaller and weaker coke, having larger cells than coke produced under slower carbonization.

PART II. PREPARATION OF COKE FOR SALE.

The foregoing part of the paper has been devoted to the effect of certain variables in manufacturing coke. The second part of the paper is intended to show the equally important features of coke treatment and preparation to the sale of the product. Summarized these are as follows:

1. **Quenching of Coke**
   - a. Methods and effect on product.
2. **Conveying of Coke**
   - a. Methods.
3. **Crushing of Coke**
   - a. Location and method.
4. **Screening of Coke**
   - a. Types of screens.
5. **Loading**
   - a. Trucks and teams.
   - b. Cars.
   - c. Storage bins.
6. **Storage of Coke**
   - a. Method.
7. **Analysis of Coke**
   - a. Sampling.
8. **Coke Sizes**
   - a. Naming.

1. Quenching of Coke

a. Methods and effect on product.

Quenching of coke in coal gas operation is of such vital importance to the successful sale of coke that every operator whose plant is not equipped with the more modern methods of coke quenching should carefully consider ways and means of improving his coke quenching layout.

The purpose in quenching coke should be to prevent combustion taking place and not to increase the coke yield. Coke when properly made and quenched generally has a silvery gray lustre characteristic of beehive coke. This in itself would be of no importance if it did not have a substantial psychological effect upon the consumer. Over-quenching or drenching produces a black, discolored coke which is looked upon with disfavor by coke users in general.

Proper quenching of coke with the efficient quenching cars and stations used in coke oven operation is not hard to obtain. Coke quenching as practiced in some of the smaller retort installations, where the coke is dragged through water and even at times allowed to remain in water, hurts the coke industry in general.

2. Conveying of Coke

a. Methods.

The belt method of conveying coke has shown its merits so well and has been so generally adopted that little need be said about coke conveying methods. The belt conveyor handles the coke with a minimum of breakage, and with the improvements in recent years in belt design, handles it economically. Its advantages over drag chains and other methods are obvious.

3. Crushing of Coke

a. Location and method.

Crushing of coke should be avoided wherever possible. When crushing coke to obtain a larger supply of a certain size, pieces smaller than the maximum opening of the crusher will be crushed with the larger sizes, thus producing an increased amount of the smaller sizes. It is, therefore, to advantage to locate the crusher whenever practical so that it may be fed with screened coke rather than with run-of-oven or mixed sizes.

4. Screening of Coke

a. Types of screens.

The proper sizing of coke is perhaps the most important feature in the preparation of coke for marketing. Apparently the anthracite dealer can distribute his product with large variations in size without unfavorable comments on the part of his consumers.

The types of screens on the market in use today are as follows:

(a) Bar grizzly.
(b) Revolving screen.
(c) Rotary grizzly.
(d) Shaker screen.
(e) Grasshopper screen.
(f) Vibrating screen.

A description of the various forms of screens, as enumerated above, was given in full detail.

5. Loading

a. Trucks.

Whether coke is loaded into canvas bags and then into trucks and teams or direct into the conveyance as bulk, care must be taken to insure clean loading. In any coke bin there will be a certain amount of breeze and fines present. As stated before, even small amounts of breeze will cause complaints from the critical consumers. The Providence Gas Company has adopted the practice of installing screens in the loading chutes in order that the coke will get a re-screen before loading. Truck and team drivers have to be constantly watched in order to prevent them from feeding the coke over these screens too fast. Here is a place where the vibrating screen would be of considerable value.

b. Cars.

Cars should be inspected for cleanness before loading and all foreign material removed. Presence of scattering amounts of foreign material in the car will cause ill feeling on the part of the consumer. Foreign material in the bottom of cars becomes thoroughly mixed with the coke on unloading, inasmuch as most cars are unloaded from the bottom.

c. Storage bins.

When a coke storage bin is filled with coke, more or less breakage is bound to occur. I have seen one installation where there is a drop of approximately 50 ft. from the delivery belt to the base of the bin. A unique and well worth while method of overcoming this trouble is obtained by a movable delivery belt. In this installation, when the bin is empty, the belt is moved so that the coke is allowed to slide down the side of the bin. As the bin fills up, the belt may be moved towards the center of the bin.

Another and cheaper method to decrease breakage in a storage bin is by use of a chute which extends to the base of the bin. The conveyor delivers the coke to the chute, which allows the coke to slide to the base of the bin or top of pile instead of falling the entire distance.

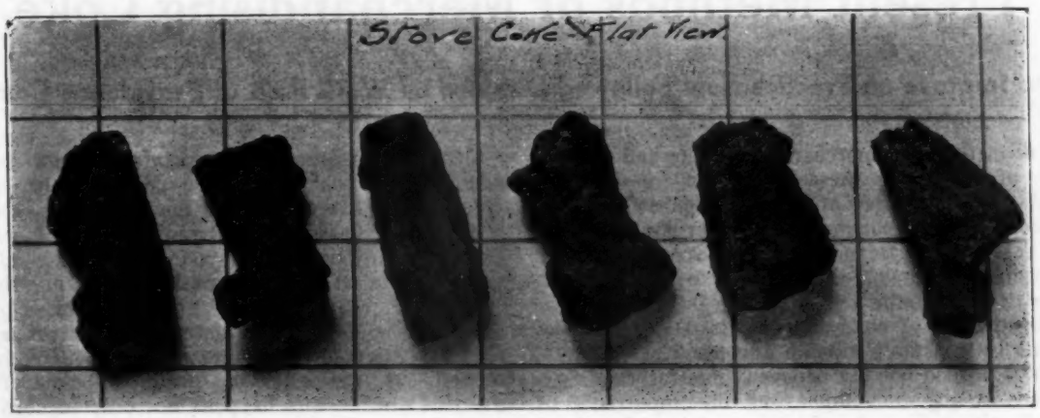
6. Storage of Coke

a. Method.

A manufacturing plant producing coke must almost without exception store coke during the summer months. Needless to state, the successful storage of coke presents its difficulties, increases the cost of the product and detracts from the appearance of the product. Despite these drawbacks, I positively feel that coke should be stored, whether profitably or not (in most cases it is profitable), rather than sold during the periods of slack demand by material price cutting. True, some advantage is obtained in price cutting by increasing the field of the market, but, on the whole, the psychological effect on the domestic trade (until the domestic field is more thoroughly developed) is to cheapen the value of this article in the mind of the domestic buyer.

If coke should and is to be stored, how may it be done to the best advantage? Because of the attraction of coke for water with the resulting discolored appearance and loss in efficiency, it should be stored beneath cover. Unfortunately this necessitates large investments and is impracticable in plants producing and storing thousands of tons.

Coke stored in the summer will in the winter pick up moisture and freeze. Whether it freezes or not, it is difficult to thoroughly screen wet coke and free it from breeze. It is, therefore, better to store sized coke than it is to store run-of-oven coke or mixture of sizes. True, this costs more, as the bulk of it



should go over a rescreen before it is ready for sale. The coke producer must always bear in mind when considering and discussing these points that increase the handling cost of coke, that coke is *worth more* than it sells for today and will *eventually command a higher price if it is always sold everywhere* as the best finished product that the gas man can produce.

7. Analysis of Coke

a. Sampling.

Coke producers who sell to the foundry trade and large industrial users are very often surprised to receive complaints on the analysis of a coke shipment which analyzed within the correct limits at the gas plant laboratory. The consumer in many cases has had his analysis made by some testing laboratory of sound reputation and, therefore, is in no condition of mind to be easily pacified or told that the analysis which he has had made is wrong and impossible. Practically all of these cases, when thoroughly investigated, are found to be caused through improper sampling. The proper sampling of coke for men trained in this field is no easy task. I know of several cases where the consumer at random picked out of a pile representing a carload shipment several pieces of coke and sent them to a testing laboratory for analysis. These analyses showed impossible results and caused considerable trouble and ill feeling.

There should be some remedy for these troubles. Obviously the gas man cannot himself hope to correct the faults of a consumer. The answer, I believe, is through our efficient Gas Association, which, as an organization, could take the matter up with the foundryman's association. The matter should be received graciously by the latter, as it would appreciate that the accentuating of such knowledge would be of benefit to its own members.

8. Coke Sizes

a. Naming.

"Send me a ton of *stove* coke," says a female voice over the telephone. One week later the same female voice complains that the coke is no good and that she cannot keep the fire going.

The names applied in the Eastern localities to the sizes of coke, although complying with the terms used by the anthracite dealers, I believe, hurt the coke industry. There is no reason why we should follow the coal man's practice. Illustration of why we shouldn't is shown by the above conversation, where the woman desired coke for her kitchen range and naturally asked for stove coke.

I do not think that coke sizes or names should be standardized, as different localities demand different sizes and different names apply better in one district than in another, but I do think that the coke industry can decrease complaints by adopting other terms for sizes than are now applied.

The criticisms in the foregoing paper on the quality and grade of gas house coke have applied to the industry in general and not to any particular plant or locality. I do not feel that the indifference of the gas man to good coke has been overdrawn or that I have overemphasized the necessity of more attention to the details of manufacturing and preparing coke.

I believe that those of us who are not producing and preparing the best grades of coke possible are not only hurting ourselves but also neighboring gas companies and the gas industry at large.

I believe that the gas man must take coke more seriously, believe in it and use it himself.

I believe that the gas man of today must be the coke man of tomorrow.

I believe that the gas fraternity at large, both coal and water gas producer, must realize the importance, value and possibilities of coke in order that those who produce coke can do justice to themselves, the industry and our country.

I believe that our association itself can do more towards developing the coke industry.

I believe that our association should have sub-committees on coke—its manufacture, preparation, sale and use.

I believe that the future of the gas industry is bright and full of possibilities that can be taken advantage of, if we, as an association and an industry, put our shoulders to the wheel.

I believe that by so doing the universal coal bin of today will be the coke bin of tomorrow.

Present Methods of Merchandising Coke

How to Improve on Practice Now Followed Outlined by W. G. Rich of Providence Company.

Present methods of merchandising coke and possible methods of improving these methods were discussed by G. W. Rich, manager of the Providence Gas Company's coke sales department, at yesterday morning's session held at the Ocean end of the Steel Pier. Mr. Rich began by stressing the necessity of bringing before the general public the advantages that are to be gained by the use of coke and discussed the means of doing this by constant, suitable advertising.

He distinguished notably between "interior" and "exterior" advertising and emphasized the importance of "interior" advertising, that is to say, the advertising in which the employee, be he executive or common laborer, is used as the medium through which the good results that are obtained from coke might become known to the public. "Encourage employees to burn coke in their homes," Mr. Rich urged, so as to set an example to others while substantiating claims that coke is a good fuel by pointing to the fact of its actual use as such.

Various other forms of internal advertising were discussed and it was pointed out how considerable valuable space within the offices and salesrooms of gas companies could be made available to advertise coke. The details of a coke sale campaign were explained by the author. Explaining the details of "exterior" advertising, Mr. Rich warned of the possible bad effects of advertising coke as a by-product of gas manufacture. "Advertise it as coke," he said, "and let the fuel stand on its own feet." He emphasized that the people must be educated to think of coke as a real part of the gas business and not as a mere by-product. Mr. Rich's address follows in part.

In the merchandizing of coke, whether it be a "coke oven coke" or a "retort coke," there is only one fundamental "ADVERTISING" which I believe most essential in disposing of coke tonnage. When the word "ADVERTISING" is used, or mentioned the mind immediately thinks of "printers' ink," etc., etc., but in referring to this fundamental-ADVERTISING, I want for a little while that we consider advertising from a broader standpoint.

Interior advertising can be explained as "Publicity of Company and Plant" producing gas and coke; creating interest among Employees in the promotion of gas and coke sales.

Exterior advertising is that form of advertising and effort which is presented to the general public and is worked vigorously in conjunction with interior advertising.

Interior Advertising

It would be an excellent thing for every Gas Company to start a campaign among their EMPLOYEES—EXECUTIVES included. In this campaign have "coke" considered and referred to as a real commodity, a fuel of merit and one that has real value in dollars and cents to the Company, and not consider it as "stuff" to fill up some hole that may be in or around plant.

A good return is expected from the sale of coke. "Always bear in mind the public will not think any more of the coke which you produce other than the interest you have in it and how you look upon it as a fuel." By associating the word "Coke" with your Gas Company it enables you to advertise it, besides placing coke on a higher level as a heating fuel.

Who is to be blamed for the great amount of prejudice against coke?—the manufacturer. How often do you hear the gas plant Superintendent and other employees of the Gas Company who produces coke refer to it as "that stuff"—this happens not only in conversation among employees, but it is mentioned as "that stuff" to the outsider. Is it any wonder the merits of coke are in question, and the seed of prejudice is sown when it is referred to so lightly? Such reference made about coke only lowers the fuel value in the employee's and consumer's mind, and eventually the consumer believes in coke only as "that stuff."

What do the employees think of coke? Do they think well enough of coke to burn it in their homes? If not, what is the reason? Surely, if the employees do not use coke, how are their friends and acquaintances to know whether it is a good or poor fuel.

Encourage employees to burn coke in their homes, so that when the question arises, "what kind of fuel are you burning?" their answer will be "coke!" Or if the question is asked of employee, "what he thinks of coke as a fuel," he will be able to answer, "it is a great fuel, and gives best results."

Seventy-five per cent of the employees of our Company burn coke for domestic purposes—the balance are placed in such position they do not require fuel. The price of coke to employees is $2.50 per ton less than the prevailing local price.

Use of Company Space to Advertise Coke

Possibly, outside of your office or your Appliance Sales Display Rooms, the trolley passes and passengers stand and wait—why not have a section of floor space divided off and make a "waiting room"? Someone of your organization would come in personal touch with the public, besides there would be but few who would "sit down and park." They would move around, and question something about a gas appliance and possibly make a purchase. The principal thought is to make your prospective customer comfortable. Incidentally, have a display stand showing the different sizes of coke placed in a conspicuous spot together with attractive placards telling the merits of coke. You will be surprised the many inquiries the public will make about coke and invariably will place their order.

Educate Your Employee

Does the employee who stands behind the counter and waits upon the public know how gas and coke are made? If not, why not? Certainly, they can talk more intelligently about the commodity for sale if they understand and have some knowledge how that commodity is manufactured. Then why not put your employees through a course of training, at plant, explaining the

manufacture of gas and coke. Those employees particularly interested in coke sales promotion—put them through a form of instruction showing them how to burn coke properly—this information naturally has to be passed to the consumer or prospective customers, if they are ever won over to the use of coke. If a "coke customer" is started off well, invariably he will always remain a coke consumer.

To make this course of instruction for employees more impressive, a complete layout of both "blue and coal gas plants" can be illustrated by drawings on the wall of the lecture room—this picturizes what the employees have already seen while on trip around plant. To make this layout of plant more attractive, certain parts of plant could be done in colors.

This feature of instruction could be given by a plant executive and would probably take two days. Arrangement could be made whereby visit to plant by employees would not conflict with routine work of department. You will find employees eager to learn more about their Company's affairs. Even those employees who are paid the "hourly wage" will give up time to see and learn the internal operations of a gas and coke plant. During the course of instruction the merits of coke are impressed upon the minds of employees for the purpose not only to interest the customer to burn coke, but to burn coke in their own homes.

Quality and Preparation

Poor quality and badly prepared coke are the fundamental reasons why the average Gas Company has to stock coke, and in order to move it, is compelled to sacrifice price. Would it not be better to spend a little time in planning a campaign, incidentally to study and make an effort to improve the quality and preparation of your coke? The average Gas Company is very lax as regards to quality and preparation of their coke. Particular care is taken with regard to quality of gas manufactured, watching it hourly for any change, but with "coke" any "old thing" will do—this is a big mistake. A very little time spent in an effort to prepare and produce a better coke, will mean an asset in more ways than one—it will enable you to sell coke, maintain a steady trade; it will also allow you to sell coke and then at a much better price, which would represent a small differential below the price of anthracite coal.

Coke is a competitor of hard coal, and to burn it properly, it should be prepared in sizes, near to that of the anthracite coal sizes. Some coke producers contend this is not necessary, but I have noticed, in my experience, in promoting sales of coke that invariably the Gas Companies who do not prepare coke in sizes usually have trouble in disposing of it for domestic purposes. This in the end compels them to stock coke, and eventually sell it at any price.

Coke Heating Appliances

While on the subject of "sizing of coke" there is another very important thing to be taken into consideration, viz., proper size of heating appliance. If heating appliances are constructed with greater depth of fire box there will be very little trouble experienced in burning coke. The fact that the "hot air furnace" has a much larger fire-box, both in width and depth, is the reason why coke burns more satisfactory over that of other heating appliances.

Personally, I do not believe in giving too much instruction in the burning of coke, for there is a possibility of your prospective customer becoming scared, and thinking he will have too much to remember if he changes from coal to coke—too much instruction causes confusion. Such slogans as "Burn coke under a *checked draft* to get best results" or "Fill fire pot full of coke—*check drafts* as required." These are short, and can easily be remembered.

Another plan in conjunction with the educational features of burning coke, is to form a "service bureau." This to comprise of two or three solicitors who can give a practical demonstration, showing the customer how to burn coke properly. The following day or two after coke has been delivered, have one of these demonstrators call and interview customer, ascertaining if proper delivery was made, and if satisfactory results, in burning coke, are being obtained. If not, have demonstrator stay with customer until he is satisfied. A good slogan could be used—"every coke customer must be a satisfied customer." The "service bureau" is rather expensive to maintain but it puts the "personal punch" into your sales and creates the impression in customer's mind that you are interested and have confidence and believe in the merits of coke as a household fuel.

[The author discussed the use of letters and the bags in which the coke is delivered to the customer as advertising media.]

Planning a Coke Sales Campaign

In planning a coke sales campaign, it is best to start the early part of the year. This gives your prospective customer a chance to prove the merits of coke during the cold weather, and he is already primed to consider "coke" as his fuel for the coming winter.

It also lays a foundation for sales of coke over the spring and summer months. A very large tonnage of hard coal is usually delivered over this period and coke advertisements should play up briefly the feature of laying in the winter's supply during the summer months when usually, the price of coke is low. Someone may ask the question "why accept an order from customer for winter's supply of coke at the summer price?" The answer is, "if you do not enter his order for full amount, he will not buy coke, but will place his order for coal with the local dealer who will be very glad to accept order and deliver coal any time to meet customers' convenience."

We all know that coke is more bulky than hard coal. If a customer is interested and wants to place an order, during the summer months for his winter's supply of fuel,—possibly at a special price,—you will have to accept his order, if you are competing with the local coal dealer. Orders of this kind can be handled by filling up customer's fuel bin during the summer, and hold the balance of order for later delivery.

Methods of Handling Winter Supply of Coke

Let me suggest three schemes whereby the customer's winter supply of coke can be handled satisfactorily both to customer and coke producer.

First, determine what the summer price of coke is going to be, and length of time for making delivery—this period usually extends from April 1st to October 1st. Customer desires to order ten tons of coke at the summer price but cannot take in the full amount. Arrange with customer to pay in cash for full amount, at the time order is accepted, advising him that he will have to take enough coke to fill his fuel bin prior to

October 1st, and the balance of his order will be held in reserve. Here you have a chance of moving approximately six tons of coke over period when coke sales are low. As a rule, the balance of order is called for within three to four months after first delivery. Results, the coke customer has been given the same advantage as that afforded by the local coal dealer, namely, being served and protected at a fixed price.

Second, is the ordering of winter's supply of coke and paying for same on a "deferred payment" plan. The customer pays a certain per cent of the total amount of coke ordered, and those who are slow in placing their order are penalized by having to pay an increased amount each month. This scheme covers a period of eight months and can be lengthened or shortened as desired.

[The working of this scheme was explained in detail.]

Third, the formation of a "Coke Club"—this operates very much the same as plan No. 2, except that the "Club" is formed into Classes 1, 2, 3, 4, 5, etc., and payments are made weekly as follows:

Class 1, members pay $1.00 per week.
Class 2, members pay $2.00 per week.
Class 3, members pay $3.00 per week.
Class 4, members pay $4.00 per week.
Class 5, members pay $5.00 per week

The class number is governed by amount of coke ordered. As an example: a member of class 3, will have a total deposit of $78.00 which has been paid over period of 26 weeks or six months. Assuming the lowest price for coke is $12.00 per ton, which price prevailed at time order was placed, the customer is entitled to 6½ tons of coke.

THE QUESTION OF PRICE

I have heard the statement made "about it being a precedent that coke must be sold at a lower price than anthracite coal." Precedent is not wholly the cause of coke being sold under the price of hard coal—the cause has been due to the manufacture of inferior grade of coke and an effort made to market same in competition with a better grade of fuel. The matter of price is wholly determined by conditions in territory where coke is produced. Plants located in certain districts can dispose of their tonnage at a price where the differential between the price of coke and hard coal is much less than in other districts where differential has to be of a greater amount. This is due to competition conditions, and different kinds of fuels offered consumer.

In some districts coke is sold at a differential of $3.50 per ton under the price of hard coal—this is excessive and unnecessary provided the coke is well prepared and of good quality. For the time being, it may be necessary to have a differential in price favoring coke. I do not think this should exceed $2.50 per ton, in fact, a reasonable differential in price under anthracite coal would be $2.00 per ton. In Providence we are selling domestic coke at $14.00 per ton, which represents $1.50 per ton differential in price under that of hard coal.

Standardize your price, realize on it either by obtaining it from the consumer in cash or spend the difference which you would drop in price in good advertising.

Good coke ranks as a domestic fuel with anthracite coal, today. In many instances it is much better—the time is fast aproaching when good coke will sell at the same price as anthracite coal. The consumer is beginning to realize the merits and value of coke as a domestic fuel and those who constantly use it state frankly, "they would willingly pay the price of hard coal for coke—it being superior in every way." The rivalry of hard coal and coke will no doubt end within a few years—it is needless to say from the rapid growth of the coke industry, which fuel will survive.

EXTERIOR ADVERTISING

In promoting sales of coke, I believe "exterior advertising" is one of the most essential features. Good strong advertising worked in conjunction with your other sales effort should produce excellent results.

In the first place, I do not think the words "by-product" or "gas house" should be attached to the word "Coke." You do not refer to tar and ammonia as "by-product" tar or "gas house" tar, or "by-product" ammonia and "gas-house" ammonia, then why refer to "Coke' as "by-product" or "gas-house" coke. Produce a coke that will stand on its own reputation without having "props" of any kind, and advertise it as "COKE"—the fuel which has merit and value.

There are many forms of advertising which will play up the merits of coke direct to your customers. The monthly gas bill is excellent and a new, brief story can be told each month. Some producers of coke use the "sticker" form of advertising—this is practicable where two or three thousand gas bills are rendered monthly and less chance of "stickers" being torn from gas bill in distributing.

Bill-boards located in prominent parts of city help materially towards promoting sales of coke. Just as the tree is planted along the wayside for shade, so the "billboard" stands ever reminding your customers and prospective customers that coke is a "real fuel" and that you are still in the coke business.

Novelty forms of advertising such as match safes, ice-picks, asbestos mats, small calendars, yard sticks, etc., etc., each performs its little trick of "telling the merits of coke," and is taken home, and there used for some purpose or other.

AS TO NEWSPAPER ADVERTISING

Possibly the best advertising medium in the promotion of sales of coke is the newspaper. Care should be taken in the preparation of copy and the general layout so as to make the "story of coke" stand out more prominently than any other advertisement on page of newspaper. If you cannot work up these features, the advertising department of your local newspaper will gladly assist you along these lines.

All that has been said about coke thus far pertains to a local market. The wholesale merchandising of coke is quite a different proposition. The continued interest must be kept of the local coal dealer or whoever handles coke in the outside market, and in addition, the same form of education must be spread among his customers. This can be done by working up an advertising campaign and the expense of such campaign to be equally divided. In addition to this, a supply of booklets issued by the manufacturer, can be given away or a nominal charge can be made—these booklets or folders can be inserted in an envelope carrying bill or monthly statement.

[The merchandising of foundry coke was also discussed, emphasis being laid on the promotion of foundry coke sales.]

Developments in Gas Technology

Important Information Gathered from all Parts of the World

By ISMAR GINSBERG, B.Sc., Chem. Eng., Associate Editor

Determination of Benzol in Gases

The various methods of determining benzol in illuminating gas are discussed in article, appearing in Chemiker Zeitung, 1922, volume 46, pages 468 to 469. It is pointed out therein that the method of determining benzene in distillation gases by absorption with activated charcoal possesses many advantages over the petroleum oil absorption method, and is recommended for works' control. The petroleum method is, however, quite trustworthy; it is the more suitable for the determination of benzene when only a few liters of gas are available, and may be used for checking the accuracy of the charcoal method.

Ammonia Yield in Carbonization of Coal

A very interesting report on a series of exhaustive tests to determine the yield of ammonia under various conditions, arising in the carbonization of coal, is published in the Jor. Soc. Chem. Ind., 1922, pages 273T to 279T. The experiments were made at low partial pressures and in atmospheres of air, nitrogen containing one to two per cent oxygen, and of coal gas containing oxygen, at temperature up to 800 degrees C., both in the presence of fused silica and unused fureclay brick. The destruction of ammonia was examined under these conditions. It was found that the oxidation of ammonia was distinctly retarded under these conditions in the presence of air and in contact with fire brick in the presence of even small amounts of water vapor. The destruction of ammonia in coal gas containing oxygen is much less marked at corresponding temperatures than with air. This destruction is not due to oxidation but to a process of dissociation. Presence of water vapor is without any marked influence. It is doubtful whether direct oxidation of ammonia occurs to an appreciable extent during carbonization even when oxygen is present. Known deleterious effect of air indrawn during carbonization and gasification is due to the local overheating of the gas following upon union of the oxygen with combustible constituents.

Heated Gas Washer

German Patent No. 336,828 is concerned with a gas washer which can be heated. Washing screens, which fill the entire inner space of the washer, rotate slowly in the washing liquor. Proper distributing devices are provided for spraying the rotating discs with the washing liquid.

Dehydration of Generator Tar

At a high temperature crude tar is brought in contact with a solution of an acid or of an acid salt of the same with strong agitation. The lower aqueous layer, which contains a certain proportion of acid, is stirred very thoroughly until complete separation has taken place. For example, a solution of 250 kilograms of sodium bisulphate is heated in solution with 500 liters of water in a vessel, provided with agitating devices and with a lead lining. The stirring arrangement is of such a type that the liquid in the upper and in the lower parts of the agitator can be stirred up separately. To the solution of the acid salt in the agitator, 5,000 liters of hot crude generator tar, at a temperature of about 80 degrees C., are gradually added, the addition lasting about two hours. During the addition the agitators are worked vigorously. After the addition the upper stirrer is stopped and the lower is started, until the aqueous layer in the agitator becomes completely clear, and the resinous matters are collected in a ball. After the solution is allowed to stand for a short time, the upper, water-free layer of tar is removed. Dilute sulphuric acid, hydrochloric acid and the like may be used in the place of bisulphate. (German Patent No. 334,658.)

Cleansing and Enriching Gas

Gas, which is made in a producer, is freed from suspended particles and simultaneously enriched by causing it to pass through a wall or screen of absorbent material, which is preferably arranged as a cylindrical wick. This wick provides an enclosed chamber, closed at the bottom with a seal of oil or other enriching medium and at the top by a gas-tight casing, the inlet to the chamber being within it and the outlet from the apparatus being on the other side of the screen. A by-pass connection, which may be wholly or partly closed by a valve, connects the inlet with the outlet outside the cleansing chamber. A constant oil level is provided by means of a float-feed chamber, and a sludge-cock or similar device produces means for running off the oil or deposited refuse from the inclined surfaces of the bottom of the apparatus. (British Patent No. 181,192.)

Coking Coal

In United States Patent No. 1,419,908 there is described a method of coking coal by placing the coal between two shallow boxes, which are then heated internally.

Heating Stove and Gas Producer

Ordinary anthracite stove of the slow combustion type is provided with a branch pipe fitted with two throttle valves, so that when being used as a heating stove the products of combustion are passed up the chimney while, when being used as a producer the producer gas generated is deflected through another pipe to an internal combustion engine, furnace, etc. (See British Patent No. 181,450.)

American Gas Journal

SIXTY-THIRD YEAR

Published Weekly by American Gas Light Journal, Inc., 53 Park Place, New York, N. Y.

Daily Edition, published in Atlantic City, October 24, 25, 26 and 27, 1922.

ELBERT P. CALLENDER, Pres. S. G. KRAKE, Vice-Pres.-Treas. A. M. GLEASON, Sec'y.

WALTER A. FAIRSERVIS, Editor

CHARLES S. MYERS, Field Representative.

Editorial Offices: Atlantic City, Chalfonte Hotel. Telephone 4444, Extension 54.